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September 25, 2014

Ms. Carlotta Stauffer, Commission Clerk
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Docket No. 140001-EI

Dear Ms. Stauffer:

Please find attached for filing in the above referenced docket the REDACTED DIRECT TESTIMONY & EXHIBITS OF DANIEL J. LAWTON. The testimony was originally filed on September 22, 2014 in confidential form. This is the public version of the testimony, and that the redacted confidential information is subject to a Notice of Intent to Request Confidential Classification filed by FPL on September 22, 2014.

If you have any questions or concerns; please do not hesitate to contact me. Thank you for your assistance in this matter.

Sincerely,

Erik L. Sayler
Associate Public Counsel

ELS:bsr
cc: Parties of Record

CERTIFICATE OF SERVICE
DOCKET NO. 140001-EI

I HEREBY CERTIFY that a true and correct copy of the attached **REDACTED DIRECT TESTIMONY & EXHIBITS OF DANIEL J. LAWTON** has been furnished by electronic mail to the following parties on this 25th day of September, 2014:

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Erik L. Sayler

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Fuel and Purchased Power Cost Recovery Clause with Generating Performance Incentive Factor	)))))	DOCKET NO. 140001-EI FILED: September 22, 2014

Redacted, Public Version

DIRECT TESTIMONY & EXHIBITS

OF

DANIEL J. LAWTON

ON BEHALF OF THE CITIZENS OF

THE STATE OF FLORIDA

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DIRECT TESTIMONY

OF

Daniel J. Lawton

On Behalf of the Office of Public Counsel

Before the

Florida Public Service Commission

Docket No. 140001-EI

I. INTRODUCTION/BACKGROUND/SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Daniel J. Lawton. My business address is 12600 Hill Country Blvd, Suite R-275, Austin, Texas 78738.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND WORK EXPERIENCE.

A. I have been working in the utility consulting business as an economist since 1983. Consulting engagements have included electric utility load and revenue forecasting, cost of capital analyses, financial analyses, revenue requirements and cost of service reviews, and rate design analyses in litigated rate proceedings before federal, state and local regulatory authorities, and in court proceedings. I have worked with numerous municipal utilities developing electric rate cost of service studies for reviewing and setting rates, including fuel clause rates and reconciliations. In addition, I have a law practice based in Austin, Texas. My main areas

of legal practice include administrative law representing municipalities in electric and gas rate proceedings and other litigation and contract matters. I have included a brief description of my relevant educational background and professional work experience in my Exhibit ___ (Schedule DJL-1).

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN UTILITY RATE PROCEEDINGS?

A. Yes. I have previously filed testimony in Florida and a number of jurisdictions across the country. A list of cases where I have previously filed testimony is included in my Exhibit ___ (Schedule DJL-1).

Q. ON WHOSE BEHALF ARE YOU FILING TESTIMONY IN THIS PROCEEDING?

A. I have been retained to review the Florida Power & Light Company ("FPL" or "Company") Petition regarding FPL's proposed gas exploration and production joint venture with PetroQuest Energy, Inc. ("the Woodford Project") and its proposed guidelines for additional such ventures ("Petition"), on behalf of the Office of Public Counsel, State of Florida ("OPC").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony in this proceeding is to address some of the

economic and regulatory policy issues surrounding the Company's Petition and its potential impacts on consumers if approved by the Florida Public Service Commission ("Commission"). Another OPC witness, Donna Ramas, will address other aspects of FPL's Petition.

Q. WHAT MATERIALS DID YOU REVIEW AND RELY ON FOR THIS TESTIMONY?

A. I have reviewed prior rate orders of the Commission, the Company's Petition and Direct Testimony of FPL witnesses Sam Forrest, Kim Ousdahl, and Dr. Tim Taylor, Company responses to interrogatories, financial reports of the Company and proposed Woodford Project partner, PetroQuest Energy, Inc. ("PetroQuest"), along with other information available in the public domain. When relying on various sources, I have referenced such sources in my testimony and/or attached Exhibits.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS REGARDING THE REASONABLENESS OF FPL'S PROPOSED WOODFORD PROJECT AND ITS PROPOSED GUIDELINES FOR FUTURE SUCH JOINT VENTURES.

A. My analysis of the Company's Petition is that it should not be approved by the Commission for the following reasons:

1. The capital investments and profits on those investments that FPL proposes to flow through the fuel cost recovery clause on

a preapproved basis would be made in the natural gas exploration, drilling, and production industry—a highly competitive market that is not regulated by the Commission. Such investments would not be part of FPL's regulated monopoly utility operations and so would not be recovered through base rates that customers pay. Under the Commission's fuel clause exception criteria, the investments should be ineligible for recovery through the fuel cost recovery clause. The fundamental role of the Commission is to protect customers from monopolistic excesses by serving as a substitute for competition. If the Commission were to grant FPL's petition, the Commission would be instead requiring customers to protect FPL from competition (in a different, nonutility industry). Granting the petition would shift the risks of its gas exploration ventures onto its customers and require them to backstop FPL's desire to diversify into a risky, competitive business.

2. FPL's claim that the Woodford Project venture with PetroQuest will generate savings for customers necessarily stems from the assumption that the price that FPL pays its subsidiary for the Woodford gas will be less than the market price of gas. In discovery, FPL provided recent historical data regarding the relationship between the cost of production in the

Woodford area and the market price of gas that belies this critical assumption. For the past four years (2010–2013), the cost of Woodford gas has exceeded the market price of gas—and the difference has been material.[1] Not surprisingly, given this relationship, the major players (including drillers who control far more acreage than PetroQuest) have virtually ceased new drilling activity in the Woodford area.[2] Thus, FPL's claim that the market price of gas will be higher than its subsidiary's costs of production plus FPL's return on investment bears no relationship to recent past experience or current reality as evidenced by the actions of competitive oil and gas exploration and drilling firms.

3. FPL's gas industry partner/ project operator, PetroQuest, says it does not know what will happen to the market price of gas over time.[3] Yet, in support of its Petition FPL purports to project the market price of gas over a 50-year period. In the face of historical data of an unfavorable relationship between the cost of Woodford gas and the market price of gas, in its projections FPL predicts that the project will generate savings for customers over the entire 50-year time horizon of the Woodford Project. Critical to the Company's conclusion is FPL's assumption that the market price of gas will increase

[1] See FPL's Response to Staff's Second Set of Interrogatories No. 75.
[2] "NGI'S North American Shale & Resource Plays Factbook" (2014), at pages 30-31. Also See Natural Gas Intelligence, www.natgasintel.com/shaledaily
[3] PetroQuest Energy, Inc. 2013 Annual Report, 10K at 20.

markedly in the near term—including an increase in the first five years of 50% and a year-over-year increase of over 22% in the 2017 to 2018 period alone.[4] Through such assumed increases in early years, in its 50-year exercise FPL builds substantial early year savings and a long-term trajectory of market prices higher than Woodford gas. These projected increases in the market price of gas naturally favor the economics of the Woodford project; however, they are inconsistent with recent history, current drilling activity, and much of what we know about the current supply and demand situation. In my view, FPL's assumptions of early increases in the market price of gas relative to Woodford gas are unreasonable, bias the analysis in favor of the Woodford project, and render FPL's conclusions unreliable.

4. FPL's conclusions of benefits to customers also remain highly vulnerable to sensitivity analyses. Under reasonable and even conservative changes in assumptions of Woodford production and the rate of change of market prices, customers could realize a loss of the majority of FPL's estimated savings, or even negative project savings (in the form of higher fuel cost recovery charges) relative to the market price of gas, or net benefits that would not be realized for decades.

[4] See Direct Testimony of FPL witness Sam Forrest at Exhibit SF-8, Column H, the natural gas market price for 2017 is $4.70 which increases to $5.74 in 2018 this is a 22.13% increase. Also see Table 2.

5. While the conclusion of net savings is built on speculative and unsupported assumptions regarding the market price of gas, under its Petition FPL would be assured recovery of all of its costs, plus a handsome profit. FPL would bear zero risk; all risks of FPL's participation in the gas exploration and production business would be shifted to its customers. FPL's customers would effectively be required to become investors in a risky, unregulated industry.

6. If approved, FPL would earn approximately [redacted] of nominal after tax profits on the Woodford project while bearing zero risk.[5] However, the severely skewed nature of the risk/reward aspects of the Petition come into focus only when FPL's proposed guidelines are taken into account. FPL proposes to spend as much as $750 million annually on similar ventures in future years.[6] Importantly, this is an annual spending limit, not a total cap: each year, under its proposed guidelines FPL could layer another $750 million of capital investments in the gas industry on top of previous years.[7] Each such annual outlay of $750 million would yield approximately $47 million of after-tax profits annually.[8] In as little as ten

[5] See FPL's Response to OPC's 4th Request for POD's No. 12, Attachment 1.
[6] Direct Testimony of FPL witness Forrest at Exhibit SF-9, Guideline I:D.
[7] *Id.*
[8] Calculated employing 10.5% equity return, 59.6% equity ratio or (10.5% * 59.6%)=6.258% weighted cost of equity times $750 million annual investment cap per Guidelines.

years, FPL could earn hundreds of millions of dollars in profits from its gas exploration joint ventures while requiring its customers to shoulder 100% of the risk of those ventures—and FPL's excursions into the gas exploration industry would be preapproved.

For all the above reasons I recommend that FPL's Petition be denied.

II: SUMMARY OF ISSUES ADDRESSED

Q. WHAT ISSUES DO YOU ADDRESS WITH REGARD TO THE COMPANY'S PROPOSAL TO INVEST IN GAS EXPLORATION AND PRODUCTION JOINT VENTURES AND TO PASS THE INVESTMENT, EXPENSES, AND RETURN THROUGH THE FUEL CLAUSE?

A. I address first, whether FPL's proposed transactions are inconsistent with the ratemaking paradigm in Florida and second (assuming the proposal survives this threshold determination) whether the proposal is reasonable in light of the customer/shareholder equities.

Q. HOW IS YOUR TESTIMONY ORGANIZED?

A. In Section III of my testimony I provide an overview or summary of FPL's proposed Woodford Project.

Section IV addresses the regulatory and policy impacts and implications of

the proposed Woodford Project. I discuss that the Petition is inconsistent with the Commission's mandate to permit the collection of only reasonable costs and that the transactions contemplated by the Petition are inconsistent with the fuel cost recovery clause under the Commission's criteria. These are very important considerations that extend well beyond this docket: as I discuss below, it is not unrealistic to expect that an approval of the Woodford Project and FPL's proposed guidelines may lead most or every utility in Florida regulated by this Commission to seek similar riskless fuel investments with a guaranteed equity return.

In Section V, I specifically address FPL's economic valuation quantification. In this part of the testimony I demonstrate that FPL's forecast of long-term market natural gas prices, which is key to any economic evaluation of the proposed project, is skewed in favor of the project and its claim of over $100 million of net benefits to customers is speculative and suspect.

In Section VI, I address specific company risk and risk-shifting issues surrounding the Woodford Project partner PetroQuest. I discuss and show how PetroQuest would be able to benefit under the terms of the agreements under the Woodford Project by shifting risks to FPL and how FPL in turn wishes to shift those same risks to its customers. Also, I address how PetroQuest's inability to forecast future natural gas prices, something PetroQuest candidly acknowledges, is a key risk factor facing

any drilling and exploration participant.

In Section VII of the testimony, I compare and contrast examples of past diversification efforts by electric utilities outside the core electric generation, transmission, and distribution services. I discuss how these efforts have been failures in many instances and in some cases caused financial harm to consumers. This is important because the proposed Woodford Project is an FPL diversification effort outside its core monopoly service business.

Section VIII addresses issues associated with FPL's proposed guidelines for future projects similar to the Woodford Project. Obviously, if the Commission denies the FPL proposal these guidelines become moot. However, if the Commission approves the proposed Woodford Project, then there are a number of issues that need to be addressed in FPL's guideline proposals.

Lastly, in Section IX I outline my conclusions and recommendations regarding FPL's Petition for approval of the Woodford Project. Each of the conclusions and or recommendations comes from the various testimony Sections outlined in the paragraphs above.

These issues and topics are addressed in the following testimony to arrive at a recommendation in this case.

III: FPL WOODFORD PROJECT PROPOSAL OVERVIEW

Q. PLEASE DESCRIBE AND SUMMARIZE FPL'S PETITION.

A. The Company's primary request in this proceeding is a determination by the Commission that FPL's investment in a joint development agreement or venture with PetroQuest to develop gas reserves in Oklahoma would be a prudent investment venture for acquiring a portion of FPL's future natural gas supplies. Specifically, the Company requests the Commission to assure it that all venture-related costs, including the investment to develop these Oklahoma properties, plus a profit or shareholder return on this investment, and all ongoing operating expenses associated with developing and recovering these gas reserves may be recovered through the Company's Fuel Cost Recovery Clause ("Fuel Clause").[9]

Another element of FPL's Petition is a request that the Commission approve a set of guidelines for investing in additional gas reserve projects in the future, such that FPL would be presumptively eligible to recover the investment and associated revenue requirements through the Fuel Clause, so long as the future projects meet the guidelines.[10]

As administered by this Commission, the Fuel Clause is a rate mechanism that authorizes periodic adjustments to a factor designed to collect costs of purchasing fuel. The fuel mechanism or factor is subject to periodic

[9] Direct Testimony of FPL witness Forrest at 5:10-15.
[10] *Id*. at 5:22-23 through 6:1-4.

reconciliation of prior estimates through refunds or surcharges. Utilities do not make a profit on fuel costs passed through the clause. Only base rate-related capital expenditures are eligible for the fuel clause mechanism, and only upon meeting this Commission's established recovery criteria relating to fossil fuel savings projects.[11]

In this proceeding, through its Petition, the Company requests the Commission to expand the traditional Fuel Clause so that FPL can import investments in the gas exploration industry and require customers to bear not only the risk of market price volatility, but also all the investment risk associated with gas exploration and production. Under FPL's proposal, the Company would remain shielded from market related fuel price and fuel exploration risk; the traditional fuel clause mechanism could become an additional vehicle for all Florida utility companies to safely expand opportunities for future shareholder earnings. This is not the purpose of the fuel clause recovery mechanism in Florida.

Q. PLEASE PROVIDE AN OVERVIEW OF THE PROPOSED FPL WOODFORD PROJECT.

A. The proposed Woodford Project transaction entails the following:

[11] See generally Docket No. 100404-EI, Order No. PSC-11-0080-PAA-EI (January 31, 2011), pages 6-10 and Attachment A.

i. PetroQuest is a publicly traded independent oil and gas company engaged in the acquisition, exploration, development, and operation of oil and gas properties in Oklahoma, Texas, and offshore Gulf Coast Basin.[12] FPL's affiliate, USG Properties Woodford I, LLC, ("USG"), entered into a joint venture with PetroQuest (the June 18, 2014 PetroQuest Agreement). FPL proposes to acquire USG's interest and to recover all the purchase investment, other capital expenditures, and operating costs through the Fuel Clause.[13] FPL's initial buy in cost is estimated at $68.4 million[14];

ii. Under FPL's proposal, FPL would be a working interest partner with PetroQuest. Thus, under the Woodford Project FPL would pay a share of the cost for developing, drilling, and operating natural gas wells in the Oklahoma Woodford Shale Gas region. In return, FPL would receive a portion of the PetroQuest interest in the gas produced by the wells[15];

iii. FPL's obligations under the PetroQuest Agreement would be to pay PetroQuest a carry or premium for its working interest. Per the Agreement, FPL would be obligated to pay [redacted] and PetroQuest would pay the remaining [redacted] of the capital

[12] Yahoo Finance at www finance.yahoo.com
[13] *Id*. at 5.
[14] See FPL's Response To Staff's Second Set of Interrogatories No. 14.
[15] Petition at 5.

expenditures for development and drilling costs for each well.[16] FPL would be entitled to [redacted] of the PetroQuest output entitlement and PetroQuest would be entitled to [redacted] of the well output[17];

iv. FPL would be obligated to participate in a minimum of 15 wells by the end of 2015 and up to 38 wells under the Agreement[18];

v. FPL estimates its initial capital cost for USG's current interest at net book value would be $68.4 million, assuming Commission approval and transfer of interest from USG to FPL on January 1, 2015[19];

vi. The total project capital expenditures for FPL under the Project Agreements are estimated to be approximately $191 million[20];

vii. FPL would have to provide PetroQuest notice of consent or non-consent for each proposed well[21];

[16] Direct Testimony S. Forrest at Exhibit SF-6, page 3, Confidential.
[17] Direct Testimony S. Forrest at Exhibit SF-6, page 3, Confidential.
[18] FPL's Response to Staff Request 2-79.
[19] See FPL Petition at 17.
[20] *Id.*
[21] FPL's Response to Staff Request 2-79.

viii. FPL would have to pay both its working interest share of capital expenditures plus the agreed upon carry amount of capital expenditures for each well in which FPL participates[22];

ix. FPL would have to pay its working interest share of the PetroQuest operating expenses for each well in which FPL participates[23]; and

x. FPL would have to pay PetroQuest for FPL's portion of royalty payments.[24]

In support of its Petition, FPL claims that the project holds "potential" benefits for customers of $106.9 million over the assumed 50-year project life.[25]

Q. IN PLEADINGS IN THIS CASE, FPL DISPUTES THAT IT WOULD BE EARNING A PROFIT ON THE PROJECTS UNDER ITS PROPOSAL. PLEASE COMMENT.

A. FPL asserts it "… is seeking to recover only its actual costs for the projects (including its Commission-authorized rate of return on investment), no different than any other project or investment made in

[22] *Id.*
[23] *Id.*
[24] *Id.*
[25] Direct testimony Sam Forrest Exhibit SF-8, Page 1 of 1.

furtherance of providing electric service."[26] FPL, like other corporations, is in the business of making money for its shareholders. The "cost" of acquiring equity capital means simply that investors expect a certain level of profitability to inure to them when they buy shares of a corporation; the "rate of return on investment" is a metric that measures profitability by relating the earnings (profit) to the amount of capital invested. However, the Commission prohibits utilities from making a profit on fuel costs that flow through the Fuel Clause.[27]

Q. IN ITS PETITION AND PROPOSED GUIDELINES, FPL CLAIMS THAT THE WOODFORD PROJECT PROPOSAL IS A FORM OF A LONG-TERM PHYSICAL HEDGING FOR NATURAL GAS. PLEASE COMMENT.

A. I disagree with FPL's characterization. It would be more correct to conclude that the Woodford Project puts the typical FPL customer in the risk position of an oil and gas exploration and drilling speculator. Hedging, like FPL's financial hedging program, involves locking in a future price to avoid the adverse effects of price fluctuations. Hedging does not lower costs or create savings but rather stabilizes prices over time. FPL's portrayal of the Petition as a hedging mechanism is at odds with its representation that customers will likely see a lower cost of gas if its Petition is granted.

[26] See FPL's Response In Opposition To Office Of Public Counsel's Motion To Dismiss FPL's June 25, 2014 Petition For Lack Of Subject Matter Jurisdiction (Filed August 29, 2014) at 10.
[27] Order No. PSC-11-0579-FOF-EI, issued in Docket No. 110001-EI on December 16, 2011, at page 6.

A physical hedge would be a bilateral contract for gas at a fixed price. The Woodford investment has been presented not as a hedging vehicle, but rather as an investment in potential gas reserves that may result in savings if numerous assumptions turn out correct over the next 50 years. Under the proposed Woodford venture, FPL consumers are getting no protection against future market swings that one would find in a hedging instrument. Instead, consumers will bear whatever costs and risks that the market and circumstances bring to the Woodford venture. For these reasons I do not agree with FPL's physical hedge characterization for the Woodford project.

IV: REGULATORY POLICY IMPLICATIONS OF THE PROPOSED WOODFORD PROJECT

Q. PLEASE DESCRIBE THE FUEL CLAUSE MECHANISM.

A. The Commission in Order No. PSC-11-0080-PAA-EI outlines the history of the Fuel Clause and current fuel mechanism. As in most regulatory jurisdictions around the country, the purpose of the fuel clause mechanism in Florida is:

> **…** a regulatory tool designed to pass to utility customers the costs associated with fuel purchases. The purpose is to prevent regulatory lag, … [r]egulatory lag has historically been a problem for utilities because of the volatility of fuel costs. It is not as much of a problem, however, when expenses, such as capital improvements, and operations and management

> costs, can be planned for and included in base rate calculations.[28]

Over the years, the fuel clause has been adjusted a number of times addressing both frequency of fuel filings, use of historical or projected data, and identification of costs and exceptions that are allowable under the fuel clause.[29] Fuel filings are now annual and based on projected data that is ultimately reconciled to actual costs.[30]

In terms of the types of costs that are exceptions or would normally be recovered through base rates the Commission's fuel mechanism policy is flexible enough to recognize:

> … recovery through the fuel adjustment clauses of expenses normally recovered through base rates when utilities are in a position to take advantage of a cost-effective transaction, the costs of which were not recognized or anticipated in the level of costs used to establish the utility's base rates.[31]

Thus, there is a threshold requirement that costs must first be eligible for base rates in order to be considered for the fuel cost recovery clause. The proposed capital investments described by FPL would be made in conjunction with FPL's decision to diversify into a separate, unregulated industry. The proposed investments are not related to FPL's regulated

[28] In re: Petition by Florida Power & Light Company to recover Scherer Unit 4 Turbine Upgrade costs through environmental cost recovery clause or fuel cost recovery clause, Docket No. 100404-EI, Order No. 11-0080-PAA-EI (January 31, 2011) at 6.
[29] *Id.*
[30] *Id.*
[31] *Id.* at 7. Citing the Stipulation of the Parties adopted by the Commission in Order No. 14546.

monopoly utility business that is supported by customers through the base rates that they pay; therefore, these proposed investments do not appear to qualify for base rates.

Q. DO PAST REGULATORY DECISIONS BY THE COMMISSION—FOR EXAMPLE, ALLOWING FPL TO PURCHASE RAIL CARS AND FLOW THEM THROUGH THE FUEL COST RECOVERY CLAUSE—SUPPORT FPL'S REQUEST IN THIS CASE?

A. No. The purchase of rail cars for coal transportation was evaluated as a lower cost alternative to leasing the same equipment. Thus, like many corporate decisions made by FPL, the lower cost alternative between owning and leasing, ultimately the lowest cost or most beneficial route was selected and ultimately approved by this Commission.[32] But, this own or lease alternative of rail cars is a very different choice compared to choosing between leasing rail cars or *manufacturing* rail cars. Theoretically, if given certain regulatory guarantees, FPL may in fact be able to manufacture rail cars at a lower cost than leasing or purchasing in the open market. Nevertheless, allowing FPL to manufacture rail cars and guaranteeing FPL a return on investment for a rail car manufacturing facility would go well beyond the essential electric utility functions of generation, transmission, and distribution of electricity. Moreover, an unregulated and competitive market for the manufacturing of rail cars exists, but if the Commission were to authorize FPL a regulatory return

[32] See Docket No. 100404-EI, Order No. PSC-11-0080-PAA-EI, (January 31, 2011) at 9, citing Order No. PSC-95-1089-FOF-EI (September 5, 1995).

and cost recovery, FPL's customers would be guaranteeing FPL's profits and insulating it from the necessity of competing in that market.

FPL's Woodford Project proposal in this case is analogous to the rail car *manufacturing* example above. In other words, regulatory authority would be employed outside the core area of the natural monopoly and the result would be to insulate FPL from the risks of competing with non-regulated firms in non-regulated competitive markets, through the use of the powers of the Commission and the wallets of FPL's customers.

Q. EARLIER, YOU SAID THAT APPROVING FPL'S PETITION WOULD HAVE IMPLICATIONS FOR THE FUTURE OPERATION OF THE FUEL CLAUSE IN FLORIDA. PLEASE EXPLAIN WHAT YOU MEAN.

A. If the Commission shields an electric utility from risks in the competitive oil and gas exploration and drilling business by transferring the risks to the utility's customers through the operation of the Fuel Clause, the decision could create incentives that would negatively impact customers' costs. Other participants in the competitive market must factor market conditions into a decision to produce or not to produce. However, a utility that has received "preapproval" of its project and assured recovery of its investment and operating costs would have an incentive to disregard those market signals. Such incentives could turn the Fuel Clause from a mechanism designed to filter out unreasonable costs to one that

encourages a utility to disregard cost levels. I illustrate this point further, using the Woodford Project as an example, later in this testimony.

V: FPL'S WOODFORD PROJECT COST/BENEFIT ANALYSIS

Q. A SECOND REQUIREMENT UNDER THE ORDER NO. 14546 FUEL EXCEPTION IS A REQUIREMENT THAT THE INVESTMENT, (IN THIS CASE THE WOODFORD PROJECT) "IF EXPENDED WILL RESULT IN FUEL SAVINGS TO CUSTOMERS." ON WHAT ECONOMIC BASIS DOES FPL SEEK TO JUSTIFY ITS REQUEST FOR AUTHORITY TO COLLECT WOODFORD PROJECT COSTS THROUGH THE FUEL CLAUSE?

A. In support of its Petition FPL relies principally on a "base case" analysis in which it claims that the project holds "potential" benefits for customers of $106.9 million over the assumed 50-year project life.[33]

Q. WHAT IS THE BREAKDOWN OF THE OPERATING COSTS RETURN ON CAPITAL AND PROFIT THAT FPL ESTIMATES FOR THIS PROJECT?

A. The Company's specific economic analysis can be found in Confidential Exhibit SF-8 of Mr. Forrest's direct testimony. Some of Exhibit SF-8 is not designated Confidential and I discuss these non-confidential items below. This 50-year economic analysis or project life-cycle analysis

[33] Direct testimony Sam Forrest Exhibit SF-8, Page 1 of 1.

(covering the period 2015 through 2065) develops the expected annual gas production output (Exhibit SF-8 at Column "B"), and the expected annual revenue requirement (including all operating costs and requested shareholder profits in Column "F"), and computes an annual unit cost of gas from the participation in the Woodford Project in Column ("G").[34] These forecasts of gas costs from participation in the Woodford Project are compared to FPL's forecast of market prices of gas for the next 50 years shown in Column ("H").[35] FPL then compares the annual projections of the Woodford Project gas acquisition costs and requested return on investment with the Company's forecast of the annual market price of the natural gas alternative. The difference between the Woodford Project annual unit cost and the annual forecasted market unit cost of gas is the claimed annual nominal savings to customers. These annual nominal cost differences are then multiplied by the expected annual Woodford Project gas output to arrive at a total annual forecasted cost difference between the Woodford Project and market purchases. These estimated annual cost differences are shown in Mr. Forrest's testimony at Confidential Exhibit SF-8, Column ("I"). The nominal annual cost differences of the Woodford Project are then discounted to a net present value using a 7.5% discount rate to arrive at the claimed $106.9 million of projected Project savings for customers. This net present value estimate is shown in Mr. Forrest's testimony at Confidential Exhibit 8, Column

[34] The forecasted annual cost of gas over the 50-year time horizon measure in ($/MMBtu) is shown in the Direct Testimony of Sam Forrest Confidential Exhibit SF-8, at Column G. These annual amounts are estimated by dividing annual estimated revenue requirements (Column F) by annual estimated gas production (Column B).

[35] Direct testimony Sam Forrest Exhibit SF-8, Page 1 of 1

("K").

To illustrate how the analysis is constructed, I have summarized the non-confidential project totals in the Table 1 below.

TABLE 1

FPL'S ESTIMATED WOODFORD PROJECT LIFE CYCLE SAVINGS

YEARS	WOODFORD PROJECT OUTPUT (BCF)	WOODFORD PROJECT REVENUE REQUIREMENT	WOODFORD AVERAGE UNIT COST	FPL MARKET PRICE FORECAST	FPL CLAIMED NOMINAL SAVINGS	NPV SAVING
2015-2065	137.8	$709.4 ($MM)	$5.148 ($/MMBTU)	$8.01 ($/MMBTU)	$394.7 ($MM)	$106.9 ($MM)

As shown in Table 1, FPL estimates that this project will produce 137.8 Bcf of gas over the 50-year projected project life. FPL estimates that the 50-year Project life operating expenses will be $323.2 million, depreciation expense will be $190.8 million, and the investment return requirements consisting of debt cost, shareholder profit, and associated income taxes will total $195.5 million for a total forecasted Woodford Project revenue requirement cost of $709.4 million.[36] The average unit cost of gas from the Woodford Project is the result of the ratio of projected Woodford Project revenue requirement of $709.4 million to projected Woodford Project output of 137.8 Bcf of gas, resulting in an average price

[36] *Id.* The operating expenses, depreciation expenses, and return on investment are combined to the $709.4 mm in Column 3 of Table 1 Revenue Requirement.

of $5.148 per MMBtu over the expected project life. FPL's analysis compares these annual Woodford Project forecasts of gas costs resulting from the Woodford Project revenue requirements to the Company's forecast of annual future natural gas market prices to estimate annual Woodford Project net savings. I have provided in Table 1 the average natural gas market price and resulting nominal savings FPL claims will result if these 50-year forecasts and all Woodford Project assumptions hold true over the 50-year time horizon of the forecast. Under FPL's estimates and assumptions the Woodford Project will result in $394.7 million of forecasted gas cost savings versus the 50-year gas market price forecast. This $394.7 million of nominal project savings implies an FPL average forecast natural gas price of $8.01 (($394.7 nominal savings + $709.4 Revenue Requirement)/137.8 Bcf output). Lastly, these $394.7 million of projected nominal savings is discounted to a net present value of $106.9 million employing the 7.5% discount rate.

Q. DOES FPL GUARANTEE FUEL SAVINGS FROM THE WOODFORD PROJECT?

A. No, it does not. The $106.9 million of Woodford Project net present value savings are a projection by FPL, not a guarantee.[37] If natural gas market prices or Woodford Project projections are different and more negative than the levels projected by FPL, customers will have lower than the

[37] See FPL's Response to Staff's 2nd Set of Interrogatories No. 93.

estimated savings and potentially negative savings.[38] The only guarantee under FPL's Woodford Project proposal is that no matter how the cost projections or forecasts of natural gas prices turn out, FPL will collect its investment, operating costs, and profits. In the current Woodford Project proposal FPL will earn approximately [redacted][39] in additional nominal profits whether this project produces a dime of consumer savings, over the 50-year life of the project.

FPL obviously has an economic incentive to get this proposed project approved, up, and running. Further, FPL stands to gain additional annual earnings or profits of approximately $47 million per year if the maximum investment level for each year is met under the proposed Guidelines for future projects.[40] The $47 million is not a total, cumulative figure; each year, through additional joint ventures with gas production companies, this level of profits could be added to prior profit levels. Because of the "true up" feature of the fuel cost recovery clause, these project investment amounts would be guaranteed recovery for FPL. The potential over the next number of years for future guaranteed profits in the many hundreds of millions of dollars is additional incentive for FPL to support this proposal.

[38] *Id.*
[39] See FPL Confidential Response to OPC 3rd Request, No. 37(c). Also, see Confidential Response to OPC 4th Request for POD's, Request No. 12, Attachment 1.
[40] Calculated as weighted equity return of (10.5% ROE * 59.6% Equity level) * $750,000,000 Guideline maximum annual investment level.

Q. WILL THERE BE A NEGATIVE IMPACT ON AVAILABILITY OR PRICE OF GAS TO FPL CUSTOMERS THROUGH THE FUEL CLAUSE IF THE WOODFORD PROJECT IS REJECTED?

A. No. The Woodford Project has no impact on natural gas supplies available to FPL for generation of electricity. The proposed Woodford Project has nothing to do with risks to supply. Instead, FPL claims ownership of gas reserves can benefit customers by lowering gas prices. But customers would bear all the risks of FPL ownership initiative. Thus, FPL's proposal would require Florida electric customers to become speculators in the risky natural gas reserve, exploration, and drilling industry. If the investment guess is correct FPL will profit and customer savings will occur; if not, FPL will profit to the same extent, but customers may pay more than the market cost of gas.

The true beneficiaries under FPL's Petition are FPL's shareholders. The Company would be able to expand capital expenditures and earnings growth through the fuel clause mechanism and be guaranteed a profit at no risk. Under its proposed criteria over time FPL's shareholders would have the potential to gain many hundreds of millions of dollars in additional earnings at zero risk.

Q. IN YOUR OPINION, WHAT ARE THE KEY COMPONENTS OF

THE FPL PROPOSED PROJECT LIFE CYCLE ANALYSIS YOU DESCRIBED ABOVE?

A. First, it must be remembered that this is a 50-year estimate. Obviously, actual results will be different from these forecasts. The key drivers in the economic evaluation of the Woodford project proposal are the reasonableness of the projections of gas output from the Woodford project, the reasonableness of costs and revenue requirement estimates for FPL's proportionate share of ownership in the Woodford project, and the reasonableness of the forecasts of the market price alternative for natural gas. With respect to the project's output of gas over time, FPL employs a ten percent sensitivity factor, asserting that a ten percent up or down factor of estimated output is a value commonly employed in the industry. I have no reason to doubt FPL's claim regarding what the industry uses to modify estimates of the ability to extract identified resources in gas reserves. I would note, however, that this ten percent factor does not take into account structural changes that may occur over the 50-year project life regarding such contingencies as new legislation and regulatory changes. In any event, a review of the underlying sensitivity analyses discussed at page 38 of Mr. Forrest's testimony indicates that the output sensitivity factor has a smaller impact than market price forecast on the economics of the Woodford project.

The second economic driver is the costs of producing the Woodford Project gas. FPL's proposed subsidiary will simply provide capital to

PetroQuest; PetroQuest will operate the venture and incur the production costs. Just as legislative, regulatory, or other structural changes can affect the output of the Woodford Project during its expected 50 years of operation, they can affect PetroQuest's production costs. Unlike the assumptions as to output, FPL has not accounted for the risk of greater-than-projected production costs in any sensitivity analysis. Moreover, as OPC witness Donna Ramas observes in her testimony, the Commission has no authority to audit PetroQuest's production costs for reasonableness.

The third and probably key economic variable—the future prices of natural gas—is a wild card. FPL and PetroQuest cannot predict future market prices for natural gas—a fact that PetroQuest readily acknowledges.[41] The unknowable nature of future prices of natural gas and oil is one of the reasons natural gas and oil exploration and drilling is a risky business. For this proceeding, FPL forecasts annual future natural gas prices over a 50-year period. FPL concludes that its estimates of annual future gas prices are higher than the Company's estimates of the annual gas costs from the Woodford Project; thus FPL concludes customers benefit under the Woodford Project.

Q. HAVE YOU REVIEWED THE FPL FORECAST OF FUTURE MARKET PRICES?

A. I have reviewed the FPL market price forecasts of natural gas presented in

[41] PetroQuest Energy, Inc., Annual Report at 20, (2013)

Mr. Forrest's Exhibit SF-8 and evaluated the annual increases embodied in these estimates. The following table shows FPL's proposed annual Woodford Project output gas production, Woodford estimated cost per unit of gas in $/MMBtu, FPL's market price forecasts, along with the annual percentage changes in these FPL estimates. I have also included the compound annual growth rate ("CAGR") for FPL's Woodford Project cost estimate and the Company's forecast of natural gas market prices.

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TABLE 2

FPL FORECAST ESTIMATES OF WOODFORD PROJECT OUTPUT, UNIT COSTS, AND FUTURE NATURAL GAS MARKET PRICES 2015 THROUGH 2024

YEAR	WOODFORD OUTPUT (Bcf)42	CUMULATIVE PERCENT OUTPUT	FORECAST WOODFORD COST PER $/MMBtu43	ANNUAL PERCENT CHANGE	FPL FORECAST MARKET PRICE44	ANNUAL PERCENT CHANGE
2015	15.6	11.32%	$3.48	____	$4.02	_____
2016	16.8	23.51%	$3.56	2.30%	$4.30	6.97%
2017	11.3	31.71%	$4.00	12.36%	$4.70	9.30%
2018	8.7	38.03%	$4.40	10.00%	$5.74	22.12%
2019	7.1	43.18%	$4.96	12.73%	$6.03	5.05%
2020	6.1	47.61%	$4.79	-3.43%	$6.13	1.66%
2021	5.3	51.45%	$4.94	3.13%	$6.33	3.26%
2022	4.7	54.86%	$5.08	2.83%	$6.63	4.74%
2023	4.3	57.98%	$5.21	2.56%	$6.73	1.51%
2024	3.9	60.81%	$5.34	2.50%	$7.03	4.46%
TOTAL AT 2064-65	137.8	100%	$12.8145	2.70% CAGR	$31.5146	4.29% CAGR

[42] Direct Testimony Sam Forrest at Exhibit SF-8, Column B.
[43] *Id.* at Column G
[44] *Id.* at Column H
[45] OPC's 4th Request for POD's, Request No. 12, Attachment 1.
[46] *Id.*

The Woodford Project output is substantial in the early years. For example, by 2018, during which FPL projects the market price will increase by about 22% over the prior year, over a third of total output has been recovered. When asked in discovery to support the 22% projected increase for the period 2017 to 2018, other than the statement that the Company transitioned to a different market price forecasting method during this period, FPL failed to provide a credible economic basis or explanation for the substantial market forecast increase.[47] I do not regard that answer as credible support for such an assumption.

By 2024, the tenth year of the 50-year project, over 60% of the projected output is recovered. Thus, early year forecasts will have a larger impact on project economics. Early year higher output levels also lowers the Woodford Project per unit cost as well. In year 2015 the projected Woodford Project per unit cost of gas is $3.48. Between 2016 and 2017 when annual output declines from 16.8 Bcf to 11.3 Bcf or (about a 33% decline) Woodford unit cost goes from $3.56 in 2016 to $4.00 in 2017 which is a 12.4% increase in Woodford cost. I have included the Woodford per unit cost and percentage changes in Table 2. I also estimated FPL's claimed Woodford Project cost CAGR to be 2.70%.

FPL's forecast of alternative market natural gas prices starts out at $4.02 for 2015 and increases substantially through 2020. Significantly, during

[47] OPC's 4th Set of Interrogatories Question No. 61.

the early stages of the Woodford Project (2015 through 2020), a period in which *FPL projects substantial market price increases* (about 52.5% increase in the price of natural gas in this period $4.02 to $6.13) almost half of the expected total gas recovery from the Woodford Project is accomplished. The remaining 50% of gas expected from the Woodford Project will be recovered over the remaining life of the project. I am aware of no reason or factor impacting gas markets that supports such substantial price changes during the 2015 to 2020 period.

The bottom line is that FPL starts out with a low cost for the Woodford Project compared to FPL's forecast of alternative market prices for natural gas. FPL then estimates that future natural gas market prices will increase at a much faster rate than Woodford Project costs. Under FPL's assumptions the end result of FPL's exercise is a mathematical certainty, Woodford will always cost less in FPL's model. The question that needs to be addressed is whether FPL's assumptions are reasonable and reliable.

Q. HOW SENSITIVE TO CHANGES IN THE PROJECTED MARKET PRICES IS FPL'S CLAIM OF NET BENEFITS TO CUSTOMERS?

A. The amount of benefits is very sensitive to changes in market price assumptions. FPL includes low and high sensitivity analyses for its natural gas market price forecast.[48] When the FPL low natural gas price

[48] Direct Testimony S. Forrest at 37- 38.

sensitivity analysis is combined with a 10% reduction in projected Woodford output, the economics of the entire Woodford Project become negative for consumers during all years of the project.[49] Alternatively, when only future gas prices are lowered and all other FPL assumptions remain the same as FPL has presented, customer net present value savings amount to only $10.3 million over the 50-year life of the project.[50] This low price sensitivity case represents a 90.4% reduction to FPL's base case estimate of $106.9 million of savings. Under this scenario of lower market prices and all other FPL assumptions being correct, customers do not receive cumulative positive net present value benefits from the project until 2037.[51] In other words, all benefits come from the back end of the 50-year project. I have included in Confidential Schedule (DJL-2) a summary of the annual benefits showing that the first year of cumulative customer benefits occur in 2037. This amount of forecast benefit is not worth all the risks being imposed on customers over the 50-year life of the Woodford Project.

Q. WOULD FPL LOSE MONEY IF THE FORECAST OF NATURAL GAS RECOVERY, REVENUE REQUIREMENTS, OR FORECASTS OF FUTURE MARKET NATURAL GAS PRICES IS DIFFERENT FROM THOSE PROJECTED?

A. No. FPL would recover all its operating costs, investment, taxes, and earn

[49] *Id*. at 38.
[50] *Id*.
[51] See Confidential Schedule (DJL-2)

a guaranteed profit no matter how these estimates turn out. As I discuss above, in the scenario where one assumes all of FPL's assumptions are correct except the low natural gas market price forecast assumption is employed, customers would receive a net present value benefit of $10.3 million. FPL will receive added nominal profits of about [redacted] over the project 50-year life. No matter what happens regarding FPL's assumptions, FPL would earn the guaranteed profit through the fuel mechanism.

Q. HAVE YOU REVIEWED OTHER FPL SENSITIVITY CASES?

A. Yes, I have. Another example is the sensitivity case where FPL employs its low market price forecast and its high estimate of Woodford natural gas output. All other FPL assumptions remain as assumed in the Company's projections. FPL concluded that customer net present value benefits from the 50-year project would be $34.1 million.[52] This sensitivity case demonstrates that the projected net benefits for customers would be about 68% lower than FPL's $106.9 million base case projection under these assumptions. What FPL and Mr. Forrest do not say is that consumers must wait until 2020 before net benefits turn positive for customers. I have included Schedule (DJL-3) showing these calculations. Under this sensitivity scenario FPL will earn its guaranteed [redacted] equity return.

[52] Direct Testimony S. Forrest at 38:8-12.

Of course, all of FPL's projections and scenarios depend on the validity of its initial, underlying assumption regarding a favorable relationship between Woodford Project production costs and the market price**.** That assumption is itself not supported by available data.

Q. WHAT DOES HISTORICAL EVIDENCE SHOW REGARDING THE RELATIONSHIP BETWEEN THE WOODFORD SHALE NATURAL GAS PRODUCTION COST AND ACTUAL MARKET PRICES FOR NATURAL GAS?

A. In response to Staff's 2nd Set of Interrogatories, No. 75, FPL provided historical information showing historical cost of production from the Woodford Shale area of Oklahoma versus the historical natural gas market price as measured by the NYMEX Henry Hub. I have included in Table 3 below the historical Woodford costs and actual market gas prices.

TABLE 3[53]

ACTUAL PRODUCTION COST VERSUS ACTUAL MARKET PRICE

	2010	**2011 1H**	**2011 2H**	**2012 1H**	**2012 2H**	**2013 1H**	**2013 2H**
Production Cost	$4.75	$4.96	$4.40	$4.11	$3.87	$4.04	$3.89
NYMEX Henry Hub	$4.39	$4.21	$3.87	$2.48	$3.10	$3.71	$3.59

[53] See Response To Staff 2nd Set of Interrogatories, No. 75.

Table 3 above shows what actually happened in the Woodford Arkoma natural gas region of Oklahoma (the area of interest for FPL's Woodford Project). Based on the above information customers would have paid higher than market costs in 2010 through 2013 if FPL's Woodford Project proposals had been in place during this period. Yet, in the face of this recent negative data FPL projects that its Woodford Project will generate a substantial portion of the benefits to customers from the outset, and asks the Commission to accept its projections as a reason to authorize FPL to recover all its operating costs, investment, taxes, and guaranteed profit no matter how these estimates turn out. Only customers are at risk under the Woodford Project proposal.

Q. HAVE YOU COMPARED FPL'S PROJECTIONS OF SIGNIFICANT NEAR TERM INCREASES IN THE MARKET PRICE OF GAS WITH ANOTHER ESTIMATE OF MARKET SUPPLY AND MARKET PRICES?

A. Yes, I have. The federal Energy Information Agency (EIA) is an objective source of such information. It projects no such significant increases in the market price of gas during 2015-2018. Instead, it forecasts a continuation of the current trajectory of gas supply and no abrupt year over year increases in natural gas prices in the natural gas markets. Based on the EIA's Annual Energy Outlook 2014 ("AEO2014") there is an expected

56% increase in total natural gas production between 2012 and 2040.[54] The largest contributor of this growth in natural gas production comes through increased production of shale gas, which, increases by more than 10 Trillion cubic feet between 2012 and 2040.[55] Natural gas demand by the U.S. electric power industry is expected to grow at about 0.7% annually from 2012-2040.[56]

In terms of forecasts of prices for natural gas, current EIA forecasts indicate a reference case forecast of 3.7% annual price increase through 2040, bounded by a low and high estimate of 3.5% to 4.0%.[57] There are no EIA forecasts supporting the assumption of year-over-year increases as high as 22% by 2018.

Q. IF THE CURRENT EIA REFERENCE CASE NATURAL GAS PRICE FORECAST OF 3.7% ANNUAL INCREASE IS EMPLOYED IN FPL'S WOODFORD PROJECT ECONOMIC EVALUATION, WHAT ARE THE RESULTS?

A. Employing a natural gas price increase rate of 3.7% and applying that price growth rate to FPL's $4.02/ Mcf 2015 estimate starting point, indicates proposed consumer benefits decrease from FPL's claimed $106.9 million (net present value) to about $43.8 million. (See Confidential Schedule DJL-4) Thus, employing the EAI's most current

[54] EIA's Annual Energy Outlook 2014 ("AEO2014") at MT-23
[55] *Id*. Where Tcf equals trillion cubic feet.
[56] *Id.* Reference Case Forecast MT-26
[57] *Id.* At MT-22

reference case analysis for future gas prices, results in reducing FPL's Woodford Project projected economic benefits by approximately 59%, before consideration of any alternative risks and also assuming all of FPL's remaining assumptions and projections regarding the initial relationship of Woodford production costs to market price and projected output are valid.

Q. WHAT IS YOUR CONCLUSION AFTER CONSIDERATION OF EIA'S MOST CURRENT ESTIMATES FOR NATURAL GAS PRODUCTION AND NATURAL GAS PRICE FORECASTS?

A. There appears to be ample evidence of an abundant supply of natural gas in the U.S. projected to supply domestic energy needs well beyond EIA's current forecast horizon of 2040. Moreover, in contrast to FPL's projections of significant increases in market price in the near term, price forecasts of domestic natural gas are below 4% annually in most scenarios. Application of EIA's reference case price forecast of 3.7% annual price increases to FPL's base case proposal results in minimal annual benefits over the expected 50-year project life. Moreover, moreover neither the EIA forecast nor FPL's base case incorporates contingencies to reflect risks and unknowns over the 50-year time horizon.

Q. PLEASE ELABORATE ON WHAT YOU MEAN BY CONTINGENCIES AND THEIR IMPACT ON PROJECT RISK.

A. With any investment comes risk, including known risk and unknown or unforeseeable risk. Certainly, things can happen that we do not expect or predict. That is why contingencies are often built into forecasts and economic projections of the future in order to carefully evaluate certain investments. In this case I have found no contingencies built into FPL's estimates in the current case to reflect possible structural or external changes. Instead, we find the two basic sensitivity analyses regarding gas volume output and market forecast prices discussed earlier. Moreover, no contingency considerations are built into the proposed guidelines that will guide future gas reserve investments. To ignore alternative contingency scenarios would be shortsighted.

Examples of contingencies can be found in basic budgeting and planning for projects where there are a great many unknowns. We often see contingencies included in construction and demolition budgets. For example, nuclear decommissioning expense estimates is a classic example of where regulatory authorities employ contingencies in the estimates for estimating costs and setting rates.

The bottom line is that a reasonable contingency factor can help evaluate whether the base project economics produce sufficient benefits to even consider moving forward, considering the remaining risks and unknowns.

Q. GIVEN THAT THERE IS A GREAT DEAL OF DATA CONCERNING NATURAL GAS RESERVES DRILLING AND EXPLORATION COSTS, IS IT NECESSARY TO EMPLOY CONTINGENCY CONSIDERATIONS?

A. Yes. While it is true that there is substantial historical experience regarding costs associated with gas reserves drilling and exploration, that does not mean a contingency for this long-term 50-year projection should not be employed.

An example of a reason to employ a contingency is the consideration of technology change impacts on future electric demand not only at FPL, but also around the country. This would have an impact on both the utilities' demand and need for natural gas and the future price of natural gas. Innovations and efficiencies built into electric and gas consuming devices have certainly impacted consumer demand over the years. In the natural gas utility distribution business, local gas distribution companies have seen small consumer use per customer decline for a number of years, due in part to improved and more efficient appliances and recognition of conservation efforts.

A forecasted change in the electric utility industry is the cost competitiveness of solar and battery storage distributed generation that would cut into grid consumption and overall utility demand and generation needs. A recent article in Barron's magazine reports that Barclay's Bank

announced a downgrade for all electric utility bonds due to viable solar alternatives gaining a cost competitive advantage.[58] Barclays downgraded the entire U.S. utility bond market based on the increasing opportunities to cut "… grid electricity consumption with solar and battery storage."[59] Barclays further recommended that investors move out of utility bonds "… whenever solar-plus-storage is becoming cost competitive, including in Hawaii now, California by 2017, New York and Arizona by 2018, and many other states soon after."[60]

While such technology advances, changes, and large scale severing of ties from the local electric company may be difficult to imagine today, all one need consider is that it wasn't that long ago when most customers were hard wired into the facilities of the rate regulated local telephone provider. But the telephone service has changed dramatically in the past 25 years. One must keep in mind that 25 years is only half the life of the proposed Woodford Project.

Q. IN THE ABSENCE OF SCENARIOS INCORPORATING SUCH EXPLICIT CONTINGENCIES, WHICH ECONOMIC ANALYSIS DO YOU BELIEVE COMES CLOSEST TO MIRRORING THAT PRACTICE?

[58] "Barclays Downgrades Electric Utility Bonds, Sees Viable Solar Competition", Barron's (May 23, 2014)
[59] *Id*.
[60] *Id.*

A. The sensitivity in which FPL combined its low range forecast of annual natural gas market price growth with FPL's lower Woodford Project output assumption would be the best proxy for an analysis that adequately incorporates a provision for decreases in demand from electric providers and the resulting demand decreases in natural gas demand contingencies. Employing FPL's low range market price growth rate in the economic evaluation model with its low output case results in negative net present value savings of ($14.4) million for the Woodford Project. Said differently, this analysis indicates that customers would pay more, not less, than market price for gas obtained from the Woodford Project under these assumptions.

Q. WHAT DO YOU CONCLUDE REGARDING FPL'S ECONOMIC EVALUATION OF THE PROPOSED WOODFORD PROJECT?

A. First, all forecasts will be wrong. The question is whether the forecasts are reliable and reasonable estimates with which to bet customers' future rates, as FPL has proposed. This is because no matter how the forecasts turn out, under the proposal FPL recovers all costs, investments, and profits. Only customers are at risk.

Thus, while actual future values will be different, so long as the relative relationships of these variables remain as estimated the overall conclusions should also hold. But, if one variable — whether costs, output, or market price estimates — should change from the projected relationship assumption then all the conclusions could collapse. The one

variable that this Commission should be most concerned about is FPL's or any entity's claim of being able to reasonably forecast a long run estimate of future market natural gas prices. In 1979, the U.S. government proclaimed a natural gas shortage and banned construction of new natural gas generating facilities. Now, in the 2014 forecast the U.S. government estimates an abundant supply of natural gas at historically low prices that is expected to be a primary fuel source for many industries, including the electric generation sector. As I have described, FPL predicts that the market price of gas will increase significantly during the early years of the Woodford Project, including a 22% increase projection for 2018 alone. Given the historical relationship between Woodford production costs and the market price, the economics of the project would look very different without such assumed increases. It is easy for FPL to make such predictions and to ignore contingencies when the Company has zero risk if the predictions fail. FPL actually gains a mechanism to earn a guaranteed profit, no matter how these projections turn out. But the customers have a great deal to lose, with very little upside given the current state of natural gas markets. The bottom line is that FPL's underlying economic analysis of the proposed Woodford Project is unreasonably biased in favor of its proposal. As I have demonstrated, FPL's claim of net benefits dissipates with adjustments to moderate the unrealistic market price increases it projects for the early years of the Woodford Project and to incorporate some recognition of contingencies.

Q. IS THERE A RECENT PRECEDENT THAT YOU REGARD AS A PARALLEL TO THE COMMISSION'S APPRAISAL OF FPL'S SUPPORT FOR THE WOODFORD PROJECT?

A. Yes. FPL's Woodford Project proposal is in many ways analogous to FPL's EnergySecure Pipeline request that the Commission denied in Docket No. 090172-EI.[61] In FPL's EnergySecure transaction proposal, the Company requested Commission approval of need for a 280-mile natural gas transmission pipeline that would be owned and operated by FPL and included in FPL's electric plant rate base, with the costs collected through base rates.[62] In that proceeding, FPL alleged present value savings of $115 million to $400 million which savings, FPL claimed, were "confirmed" by a third party expert.[63]

The Commission ultimately rejected the FPL pipeline proposal. In its Order, the Commission noted that the evidence demonstrated the sensitivity of the analyses when certain assumptions are replaced with reasonable alternatives.[64] It also observed that the risk of overstated demand would be borne, not by FPL, but by its customers.[65] The economic evaluation presented in the present case suffers many of the same infirmities outlined by the Commission in FPL's pipeline case.

[61] In re: Petition to determine need for Florida EnergySecure Pipeline by Florida Power & Light Company, Docket No. 090172-EI, Order No. PSC-09-0715-FOF-EI (October 28, 2009).
[62] Id. at 2
[63] Id. at 3.
[64] *Id*. at 4-5.
[65] *Id.* at 4.

VI: OVERVIEW OF FPL'S PARTNER IN THE WOODFORD PROJECT PETROQUEST ENERGY, INC.

Q. WHAT ISSUE DO YOU ADDRESS IN THIS SECTION OF YOUR TESTIMONY?

A. In this section I address the business operations and risks of PetroQuest the proposed FPL partner in the Woodford Project. I discuss the PetroQuest natural gas and oil exploration and drilling business and risks, and also show how PetroQuest operations are very different from the utility business. As will be discussed below the PetroQuest exploration and drilling operation is riskier than any FPL electric utility function. Further, PetroQuest's smaller size and scale make PetroQuest riskier than its gas and oil exploration and drilling industry peers. Another important part of this Section is that much of the PetroQuest risk is associated with the unknown of future commodity prices for natural gas and oil. PetroQuest readily acknowledges to its investors its own inability to forecast future market prices and the attendant risk associated with depressed future prices. Thus, unlike FPL, PetroQuest acknowledges that it is not able to forecast future gas prices.

Another important point addressed in this Section is that PetroQuest reduces its risk in a couple of ways by having FPL as a partner in the Woodford Project. PetroQuest shifts a portion of its Project risk to FPL (which FPL proposes to put squarely and entirely on the backs of FPL customers) and PetroQuest receives through the transaction with FPL

capital to expand operations and develop reserves. I discuss each of these issues in the following pages.

Q. DESCRIBE THE BUSINESS OPERATIONS AND FINANCIAL RISKS OF FPL'S PROPOSED PROJECT PARTNER PETROQUEST.

A. PetroQuest is not a regulated monopoly, but rather operates in the competitive and more risky oil and gas exploration industry. The business and financial risks faced by PetroQuest are the competitive market risks one finds in the gas and oil exploration, development, and production business.

The corporate profile of PetroQuest is best summarized as an;

> " … independent Energy Company engaged in the exploration, development, acquisition and production of oil and natural gas reserves in Texas, the Arkoma Basin, South Louisiana and the shallow waters of the Gulf of Mexico."[66]

Thus, the PetroQuest business is dependent on the success of gas and oil exploration and production, and the successful sale of gas, gas liquids, and/or oil into the markets at sufficient price and quantity levels to cover its costs and generate a profit.

[66] PetroQuest Energy, Inc., Annual Report at 2, (2013)

In terms of market risks, PetroQuest explicitly recognizes that oil and gas markets are beyond the control of PetroQuest and that it has no ability to assure investors or business partners (such as FPL in this proposed transaction) that PetroQuest will be able to market all of the oil and/or natural gas production, or that favorable market prices can be obtained for the oil and/or natural gas produced.[67]

Q. GIVEN THAT PETROQUEST'S RISKS ARE DETERMINED IN LARGE PART BY FUTURE MARKET PRICES, DOES PETROQUEST PREDICT FUTURE MARKET PRICES?

A. No, it does not. To the contrary PetroQuest cautions investors of its inability to make such estimates and states:

> In view of the many uncertainties affecting the supply and demand for oil, natural gas and refined petroleum products, ***we are unable to predict future oil and natural gas prices*** and demand or the overall effect such prices and demand will have on [PetroQuest][68] (emphasis added)

As discussed earlier, the economic viability of FPL's proposed Woodford Project depends largely that FPL's forecasted 50-year market price will be substantially higher than the expected cost of producing the natural gas from the Woodford Project. FPL's partner, PetroQuest, experienced in the industry and dependent on the natural gas and oil markets, is unable to make such forecasts of the natural gas market. Instead, PetroQuest is willing to say the following about the future of natural gas markets:

[67] *Id.* Attached 10K at 9.
[68] *Id* at 9.

> Natural gas continues to supply a significant portion of North America's energy needs and we believe the importance of natural gas in meeting this energy need will continue. The impact of the ongoing economic downturn on natural gas supply and demand fundamentals has resulted in extremely volatile natural gas prices, which is expected to continue.[69]

Thus, PetroQuest, despite its expertise in the exploration, production, and sale of natural gas, is unable to estimate the price levels or even the future direction of such prices.

Q. DOES PETROQUEST IDENTIFY THE RISKS RELATED TO THE GAS AND OIL EXPLORATION AND PRODUCTION BUSINESS AND INDUSTRY?

A. Yes. Again PetroQuest points out that the success or failures of investments in natural gas and oil exploration such as the Woodford Project in this case are dependent "primarily on the prices we receive for our oil and natural gas production."[70] Risk factors identified by PetroQuest include:

(i) Minor changes in the supply or demand for oil and natural gas;

(ii) Condition of the United States and worldwide economies;

(iii) Market uncertainty;

(iv) Level of consumer product demand;

[69] *Id.* at 13.
[70] *Id*. at 19.

(v) Weather conditions in the United States;

(vi) Domestic governmental regulations and taxes; and

(vii) Price and availability of alternate fuels. [71]

The bottom line according to PetroQuest is "[**w]e cannot predict future oil and natural gas prices and such prices may decline**."[72](emphasis added)

Q. HOW DOES PETROQUEST REDUCE ITS RISK?

A. One approach is to enter joint development agreements ("JDA's") by selling off an interest in various projects- such as the Woodford Project FPL has presented to the Commission in this case. On this strategy PetroQuest states the following:

> As a result of the impact of low natural gas prices on our revenues and cash flow, we have focused on growing our reserves and production through a balanced drilling budget *with an increased emphasis on growing our oil and natural gas liquids production*. In May 2010, we entered into the Woodford joint development Agreement **("JDA")[73] which provided us with $85 million in cash during 2010 and 2011, along with a drilling carry that we have utilized since May 2010 to enhance economic returns by reducing our share of capital expenditures in the Woodford Shale--- During February 2012 we amended the JDA---** Under the amended JDA, the Phase 2 drilling

[71] *Id.*
[72] *Id.* at 20.
[73] The JDA mentioned in this quotation is between PetroQuest and another NextEra affiliate. It is not the contract between USG and PetroQuest which is confidential and which I identify as "DDA" in later paragraphs.

> carry was expanded to provide **for development in both the** Mississippian Lime and **Woodford Shale plays** whereby **we will pay 25% of the cost to drill and complete wells and receive a 50% ownership** interest.[74] (emphasis added)

Thus, risk shifting agreements such as the JDA for the Woodford Shale reduce PetroQuest's risk, reduces PetroQuest's investments, and provide it with liquidity and capital by limiting its capital outlays relative to overall cost, while still providing PetroQuest significant output entitlements.

In terms of the impact of the JDA's on its operations, PetroQuest states:

> As a result of the Woodford JDA and the success of our drilling programs, we have grown our estimated proved reserves by 18% and production by 10% since 2010, while maintaining our long-term debt 28% below 2008 levels.[75]

The bottom-line impact for PetroQuest resulting from entering into JDA's with Next Era Energy Resources, LLC subsidiaries such as WSGP Gas Producing LLC ("WSGP") is increased liquidity, lower risks, and lower exposure to market price declines.

It is important to note that the Drilling and Development Agreement ("DDA") that is the subject of FPL's proposal in this proceeding requires that PetroQuest pay [redacted] of drilling cost in return for [redacted] of the output entitlements.[76] This limits the PetroQuest investment risks to [redacted] and fits perfectly with the PetroQuest claimed strategy of pursuing with increased emphasis *oil and natural gas liquids production* while

[74] PetroQuest Energy, Inc., Annual Report, (2013) Attached 10K at 5.
[75] PetroQuest Energy, Inc., Annual Report 2012, 10K Attachment at 4.
[76] Direct Testimony S. Forrest at Exhibit SF-6, page 3.

growing reserves.[77] As discussed below the Woodford Project area of interest contains relatively low quantities of oil or natural gas liquids; therefore, because low natural gas prices are expected to continue, most gas and oil exploration firms – including PetroQuest – are pursuing more profitable alternative ventures containing higher ratios of oil and natural gas liquids.

Q. IS THERE MARKET EVIDENCE THAT GAS AND OIL EXPLORATION AND DRILLING FIRMS ARE REDUCING ACTIVITIES IN THE WOODFORD SHALE DUE TO LOW NATURAL GAS PRICES AND PURSUING MORE PROFITABLE EXPLORATION AND DRILLING OPPORTUNITIES?

A. Yes. To my knowledge other large and small gas and oil firms engaged in exploration and drilling activities in the area do not have a group of utility customers to whom they have shifted the drilling and exploration risk, and so must bear the market risk. The current natural gas market drilling evaluation of the Arkoma-Woodford area is as follows:

> At one point in 2008, there were more than 50 drilling rigs working the Arkoma-Woodford, but low prices, especially relative to crude oil and NGL prices, have all but choked off investment in the region. Most publicly traded companies barely even mention the play in their investor relation presentations anymore, and rig activity in the Arkoma-Woodford has slowed to a near standstill.[78]

[77] PetroQuest Energy, Inc., Annual Report 2013, Attached 10K at 5.
[78] North American Shale and Resource Plays Fact Book, Natural Gas Intelligence 2014 .

I have included in my Exhibit (Schedule DJL-5) a summary from the North American Shale 2014 Fact Book that addresses the Woodford Project area.

The other firms involved in the drilling and gas exploration business that likely do not have the regulatory guarantees like FPL, or regulatory related risk shifting contracts like the FPL/PetroQuest Agreement, view the Arkoma-Woodford natural gas drilling opportunities as less profitable than other drilling ventures. Continued low natural gas prices could well explain why other competitive market firms in the Arkoma-Woodford area are at a basic drilling *standstill* at the present time.

Thus, the market information suggests that drilling should be delayed, as more profitable opportunities can be found elsewhere. But, FPL's proposed Woodford Project with all its regulatory guarantees, ignores the competitive market price signals and FPL never explains why customers should bear the risk that competitive firms are avoiding.

Q. ARE THE OTHER FIRMS IN THE ARKOMA-WOODFORD REGION POTENTIALLY LARGE PLAYERS IN TERMS OF DRILLING ACREAGE?

A. Yes. The following table summarizes net acreage holdings for the Arkoma-Woodford shale area.

TABLE 4[79]

Arkoma-Woodford Shale

ExxonMobile	**385,000**
BP	**160,000**
Newfield Exploration	**90,000**
Vanguard Natural Resources	**66,000**
PetroQuest	**60,000**
Cinco Resources	**40,000**
Continental Resources	**33,000**
Panhandle Oil & Gas	**26,291**

As can be seen in the above table there are a number of large participants in the Arkoma-Woodford region that are not as optimistic as FPL given current market conditions.

Q. DOES PETROQUEST RECOGNIZE THE RISK INHERENT IN THE DRILLING OPERATIONS ASSOCIATED WITH THE IMPACT OF FUTURE MARKET PRICES FOR NATURAL GAS?

A. Yes. PetroQuest identifies market prices for natural gas and oil as a determinant of profitability and risk that impacts PetroQuest as an investment.[80] In terms of oil and natural gas market price risk on the PetroQuest operations, the 2013 PetroQuest Annual Report states the following:

> **Oil and natural gas prices are volatile, and an extended decline in the prices of oil and natural gas would likely have a material adverse effect on our**

[79] Natural Gas Intelligence, NGI's North American Shale & Resources Plays Factbook at 31 (2014)
[80] PetroQuest Energy, Inc. 2013 Annual Report, Attached 10K at 9.

> **financial condition, liquidity, ability to meet our financial obligations and results of operations.**[81] (Emphasis in original.)

PetroQuest goes on to state more specific risk impacts:

> Our future financial condition, revenues, results of operations, profitability and future growth, and the carrying value of our oil and natural gas properties depend primarily on the prices we receive for our oil and natural gas production. Our ability to maintain or increase our borrowing capacity and to obtain additional capital on attractive terms also substantially depends upon oil and natural gas prices. … **The prices we will receive for our production, and the levels of our production, will depend on numerous factors beyond our control**.[82](emphasis added)

Some of the factors influencing oil and natural gas market prices enumerated by PetroQuest include the following:

> … relatively minor changes in the supply of or the demand for oil and natural gas; the condition of the United States and worldwide economies; and market uncertainty.[83]

The bottom line is that market price of oil and natural gas is the key driver in terms of success for oil and natural gas exploration and production companies like PetroQuest. Market forces and influences whose predictability is commonly wrought with error determine these market prices.

PetroQuest recognizes the inability to predict future market natural gas and/or oil prices when it states:

> **We cannot predict future oil and natural gas prices and such prices may decline.** An extended decline in

[81] *Id*. at 19.
[82] *Id.*
[83] *Id*.

> oil and natural gas prices may adversely affect our financial condition, liquidity, ability to meet our financial obligations and results of operations. Lower prices have reduced and may further reduce the amount of oil and natural gas that we can produce economically and has required and may require additional ceiling test write-downs and may cause our estimated proved reserves at December 31, 2014 to decline compared to our estimated proved reserves at December 31, 2013.[84](emphasis added)

PetroQuest makes clear to its investors that PetroQuest is not able to predict future market prices. This inability to predict future market prices is a significant risk factor in the oil and natural gas and exploration industry.

Q. HOW DOES THE JOINT VENTURE WITH FPL AFFECT PETROQUEST'S RISK PROFILE?

A. The deal that PetroQuest struck with FPL would allow PetroQuest to make [redacted] of the investment, but retain [redacted] of the gas output.[85] PetroQuest has made clear to its investors that 50% of the entire CAPEX budget will be allocated to the Woodford Shale targeting liquids rich gas.[86] Further, PetroQuest tells its investors it has managed risk exposure in the following manner:

> We plan to continue several strategies designed to mitigate our operating risks. We have adjusted the working interest we are willing to hold based on the risk level and cost exposure of each project. For example, *we typically reduce our working interests in higher risk exploration projects* while retaining greater working interests in lower risk development projects. **Our partners often agree to pay a disproportionate**

[84] *Id*. at 20.
[85] Direct Testimony Sam Forrest at Confidential Exhibit SF-6.
[86] PetroQuest Energy, Inc. 2013 Annual Report, Attached 10K at 8.

> **share of drilling costs relative to their interests, allowing us to allocate our capital spending to maximize our return and reduce the inherent risk in exploration and development activities**.[87] (emphasis added)

PetroQuest benefits by shifting the investment risk relative to its entitlements and freeing up capital for other investments, which provides an opportunity to maximize its return while reducing the inherent risk in exploration and development activities. The risk PetroQuest avoids is shifted through FPL down to FPL customers.

Q. PLEASE SUMMARIZE YOUR APPRAISAL OF PETROQUEST AND THE RISKS OF THE PROPOSED WOODFORD PROJECT.

A. PetroQuest is a small firm involved in the risky and competitive natural gas and oil exploration and drilling business. PetroQuest's bond rating is below investment grade at single B relative to FPL's current investment grade bond rating of single A.[88] PetroQuest's most recent borrowing cost was at 10%, while FPL's current debt interest cost would be less than half of the recent PetroQuest cost.[89]

PetroQuest's current strategy and business plan for the Woodford shale area is to shift the risk of drilling to FPL (and ultimately FPL customers) through the DDA which require PetroQuest to pay [redacted] of drilling expenditures but retain the right to [redacted] of output entitlements.

[87] *Id*. at 6.
[88] See AUS Utility Reports (August 2014) also see FPL Response to Staff 2nd Request for POD's, No. 4.
[89] PetroQuest Energy, Inc. 2013 Annual Report, Attached 10K at 6.

PetroQuest claims it will focus one half of its capital budget to the strategy of seeking liquid rich natural gas. PetroQuest's short-run strategy is to capitalize on this risk shifting to FPL. While PetroQuest readily acknowledges it cannot predict future market prices, the cost and risk shifting through the JDA's and in this case the DDA provides PetroQuest the necessary protections and incentives to allocate 50% of its capital budget to areas of liquid rich natural gas.

Q. UNDER THE WOODFORD PROPOSAL IN THIS CASE, WILL FPL BEAR THE MARKET RISK, PRICE RISK, ENVIRONMENTAL RISK, OR ANY OTHER RISK ASSOCIATED WITH AN OWNERSHIP INTEREST IN THE WOODFORD SHALE GAS PROJECT?

A. No, it will not. Under FPL's Woodford Project proposal all costs and risks associated the Woodford Project are shifted to FPL customers. FPL customers are expected to incur the following risks:

- Future market prices are less than projected by FPL;
- Future natural gas demand changes;
- Future environmental costs not factored into the Woodford Project costs;
- Future operating and maintenance costs are different than estimated by FPL;

- Future output and reserve levels are different than forecasted by FPL;
- Future capital cost requirements are different than projected by FPL; and
- Future federal and state regulatory requirements and obligations are different that forecasted by FPL.

All of these risk factors can significantly alter the economics of the proposed project are risks that the customers not FPL will bear under the Company's Proposal.

The end result of this proposal would that the risk of natural gas exploration, drilling, and recovery that is typically incurred by market participants such as PetroQuest, is now being shifted by PetroQuest through FPL and/or its affiliate, directly to FPL's customers. All capital cost for drilling or exploration at or over budget is shifted to customers. All operating costs risks at or above budget are shifted to customers. All risk associated with maximizing gas recovery is shifted to customer. Free markets will no longer dictate customer obligation through the fuel clause. Instead, the customer-borne costs would be a function of the specific risks faced by PetroQuest at each well and drilling site included in the project.

Q. EARLIER, YOU INDICATED FPL'S PETITION COULD HAVE NEGATIVE POLICY IMPLICATIONS THAT WOULD PROVIDE INCENTIVES TO FPL TO DISREGARD THE DISCIPLINE OF THE COMPETITIVE MARKET IN A WAY THAT COULD NEGATIVELY AFFECT CUSTOMERS. DOES YOUR DISCUSSION OF THE RISKS FACED BY FPL, PETROQUEST, AND OTHER DRILLERS IN THE WOODFORD AREA ILLUSTRATE YOUR POINT?

A. Yes. FPL in its Petition asks the Commission to guarantee full cost recovery and fully guarantee profits no matter the market price for which the natural gas products can be sold in the market place, or the amount of gas ultimately produced. By having the Florida Commission authorize FPL to direct all Woodford Project entitlements to its Florida generation and requiring FPL customers to pay all Woodford Project operating cost, investment cost, and profits on investment no matter the amount of gas or the alternative market price, FPL would have a risk free investment opportunity. For example, under FPL's Woodford Project proposal and assumptions (if correct) the Company is guaranteed about [redacted] of additional profit for shareholders.[90] Other investors in the competitive gas exploration business that do not have a regulatory guarantee or risk free opportunity to extract natural gas and oil products from the Woodford Shale area would have to factor market data into a decision to produce or not to produce.

[90] See FPL Confidential Response to OPC 3rd Question 37(c). Also see Confidential Response to OPC 4th Request for POD's, Request No. 12, Attachment 1.

Reports discussed earlier indicate that natural gas drilling in the Arkoma-Woodford area is at a standstill. The other firms involved in the drilling and gas exploration business have responded to low market natural gas prices relative to oil or natural gas liquids alternatives by slowing or ceasing drilling in the Arkoma-Woodford natural gas area. PetroQuest reports that it will target natural gas rich in liquids. The market information suggests that drilling should be delayed as more profitable opportunities can be found elsewhere. However, when FPL looks at the risks of gas drilling in the Arkoma-Woodford region it sees no corporate risk, as it would be guaranteed full cost recovery and a 10.5% return on investment. FPL says that if its Petition is granted drilling should commence immediately in January 2015. The sooner drilling starts and investment is made by FPL, the sooner the Company can begin earning a no risk, guaranteed 10.5% equity return on investment. I believe this is evidence of how the ability to shift risk to customers through the granting of FPL's Petition and the operation of the Fuel Clause could affect FPL's (or any utility's) approach to entering the risky gas production business and ultimately increase the costs borne by customers.

VII: <u>UTILITY DIVERSIFICATION STRATEGIES AND FAILURES</u>

Q. WHAT ISSUES WILL YOU ADDRESS IN THIS SECTION OF YOUR TESTIMONY?

A. In this Section of my testimony I discuss electric utility diversification strategies and failures. Given that FPL's proposed Woodford Project is a business diversification outside the monopoly core business of electric generation, transmission and distribution, it is important to visit some historical lessons learned regarding electric utility diversification and potential impacts on customers.

Q. PLEASE GENERALLY DESCRIBE PAST DIVERSIFICATION EFFORTS BY UTILITIES.

A. There is a long history of utility diversification efforts in the utility industry. A number of these ventures outside the core utility generation and delivery business led to disastrous financial results, a number of which negatively impacted customers.

One period in which utility diversification efforts accelerated was the early and mid-1980's following large construction programs and the inclusion of expensive nuclear facilities in rates. Utilities had new and higher cash flows through higher rates, but lower capital expansion needs. Some utilities saw opportunities to enter alternative utility and non-core utility business ventures as a means of increasing shareholder earnings. These diversification ventures ranged from purchasing foreign utility operations, to domestic real estate, banking, and insurance operations. Many of these ventures did not end well for the utility or its customers.

One example of a failed diversification strategy is El Paso Electric Company ("El Paso"). In the mid-1980's, El Paso employed a portion of the proceeds from the sale and leaseback of its ownership share of Palo Verde Nuclear Units 2 and 3 to invest in a range of non-utility businesses. The initiative failed miserably. The Value Line Investment Survey assessment of El Paso's tragic diversification effort stated:

> El Paso Electric has completed the sale of its non-utility holdings. The company's diversified ventures included the purchase of a hotel and two office buildings in downtown El Paso as well as investments in specialty steel products manufacturing unit and in a savings and loan association. None of these enterprises ever contributed to corporate net. In fact, losses from these pursuits drained much needed capital from the utility operations. With the sale and the writeoffs of these investments behind the company, management can now focus its attention on shoring up its core electric business.[91]

El Paso Electric ultimately ended up filing for bankruptcy protection in January 1992. While the diversification investments (real estate and banking) seemed reasonably safe at the time they were made all investments entail risk and sometimes that risk impacts customers.

A similar example of diversification gone badly is FPL's purchase of Colonial Penn Life Insurance Company in 1985. In "Billion Dollar Lessons," a book about what you can learn from the most inexcusable business failures, the authors describe how in 1985 FPL paid $565 million for Colonial Penn Life Insurance Company, which price represented a

[91] Value Line Investment Survey of April 20, 1990.

50% premium over Colonial Penn's book value.[92] While Wall Street initially applauded the diversification, FPL ended up selling Colonial Penn in "1991 for $128 million" taking "a $629 million write-off."[93] The authors quote then FPL chairman James L. Broadhead as stating; "[n]ow it's time to focus efforts on the utility."[94]

Q. HOW DOES FPL'S PETITION DIFFER FROM THE PAST EXAMPLES OF DIVERSIFICATION EFFORTS THAT YOU HAVE MENTIONED?

A. In the above examples, the utilities simply used the cash flow of the utility operation to springboard their way into nonutility ventures. If these nonutility ventures failed, the losses were reflected on their financial statements and absorbed by their shareholders. In this case, FPL's diversification strategy is an opportunity for the Company to guarantee recovery of all the diversification investment, operating costs, and return. FPL's diversification strategy also creates new capital investment opportunities for the future with guaranteed profit levels. On the other hand, all the diversification risks bearing on the success or failure of these gas exploration and drilling investments are placed solely on customers. Thus, if the Woodford Project is approved as proposed all the risk associated with diversification failure falls on consumers. FPL's

[92] Carroll, Paul & Mui, Chunka, "*Billion Dollar Lessons*" (2008) at 136-137.
[93] Id at 137.
[94] Id.

shareholders would have zero diversification risk under the Woodford Project proposal.

It would appear historical lessons regarding the risk of diversification to its shareholders have been learned by FPL, as the Woodford Project proposal guarantees cost recovery, investment recovery, and profits. FPL cannot lose under this diversification effort. Only FPL customers can lose under FPL's risk shifting proposal.

The key lesson that should have been learned from the history of diversification is that when utilities venture outside their core business areas bad results can happen that should not be allowed to affect customers. This is true in areas presumed to be of conservative or low risk such as real estate, banking, and even life insurance whose primary market was the elderly. It certainly should be true of diversification into risky oil and gas exploration, which has the potential to have very negative results.

Q. FPL'S WOODFORD PROJECT PROPOSAL DIVERSIFIES ACTIVITIES TO THE NATURAL GAS FUEL AREA. GIVEN THAT NATURAL GAS IS ESSENTIAL TO FPL'S PRODUCTION OF ELECTRICITY, DOES THIS LEAD TO A LESS RISKY DIVERSIFICATION?

A. No. While it is true gas and oil reserve ownership, exploration, and drilling operations are quite different from investments in real estate,

banking, or insurance, FPL is not in the gas exploration, drilling, and production business and risks – some of them currently unknown – could impact these operations. FPL acknowledges that even the accounting requirements in this new business are so specialized and different from utility accounting that the Company must retain a third party that specializes in this accounting area to keep the books.[95] Thus, the fact that natural gas fuel is used in the utility business and purchased in large quantities by FPL does not mean the Company is prepared or qualified to be in the natural gas exploration and drilling business. I am sure FPL, like many corporations, purchased property insurance and life insurance for many years prior to the purchase of Colonial Penn Life Insurance, but those past insurance purchases didn't help mitigate FPL's problems of owning Colonial Penn. The end result is that being a purchaser of services, even a large purchaser, does not mitigate the risks associated with owning the business, or mean it is prudent to take on the risks of a new business.

Q. WHAT ARE THE POTENTIAL FINANCIAL IMPACTS AND CONSEQUENCES OF THE WOODFORD PROJECT DIVERSIFICATION ON FPL'S BASE RATES?

A. FPL's diversification into gas reserve ownership requires that the Company finance these purchases. Thus, FPL will be required to employ debt and equity capital to make these investments. Such investments in

[95] Direct Testimony Kim Ousdahl at 6:7-13.

gas reserve projects require that debt and equity capital beyond FPL's typical levels and amounts of capital expenditures be employed; increasing annual debt and equity return requirements. If the Commission were to approve the guaranteed recovery through the fuel clause mechanism such debt and equity obligations, if recovered immediately, should not result in harm or a strain to FPL's financial metrics, but might strain FPL's customers' budgets. Also, capital available to FPL is not infinite. Capital that goes to fund oil and gas ventures would not be available to fund FPL's utility business generation, transmission, and distribution requirements.

VIII: FPL'S PROPOSED WOODFORD PROJECT GUIDELINES

Q. WHAT ISSUE(S) ARE YOU ADDRESSING IN THIS SECTION OF YOUR TESTIMONY?

A. In this section I address FPL's proposed Woodford Project Guidelines for future natural gas and/or oil exploration and drilling. The Company has presented a set of Guidelines, which if approved, would form the basis, and circumstances for future Woodford Project-like transactions. FPL claims a need for such guidelines because such future transaction opportunities must be acted upon quickly without time for a rate filing Commission consideration and decision. FPL further asserts that such Guidelines are necessary because it is "… essential that a process be

established so that FPL will be able to make decisions on the projects with confidence regarding their recoverability."[96]

Through its proposed Guidelines FPL seeks assurance that future gas exploration joint ventures will be deemed eligible for recovery through the Fuel Clause.[97]

Q. PLEASE COMMENT ON FPL'S PROPOSED GUIDELINES FOR FUTURE GAS RESERVE TRANSACTIONS.

A. Guideline I. entitled "Scope of Gas Reserve Project Participation." addresses the maximum portion of FPL's average daily natural gas burn that can come from gas reserve projects. This Guideline generally serves as a limit on gas investment in Woodford type projects in an effort to maintain diversity between gas market purchases from third parties and gas reserve investments. The problem is that it does not serve as much of a limitation. For example, applying this "limitation" guideline the 2017 gas reserve projects limit of a maximum 25%[98] of FPL's average daily burn is a huge number – about seven times the Woodford Project level. These are significant investments whose economic viability relies entirely on the relative accuracy of the forecast of the future market price alternative. One only needs to look at Guideline 1.D and find that FPL's proposed gas

[96] FPL Application at 8.
[97] Id at 25, paragraph 55.
[98] Direct Testimony S. Forrest Exhibit-SF-9.

reserve project investment limit is an astounding $750 million per year.[99] After a few years of active participation in the exploration and drilling business FPL could easily find an added $2 billion investment and earn an additional $125 million per year of profit.[100] Given that FPL has no risks, the Company has every incentive to maximize investment and guaranteed profits. Investing the maximum of $750 million per year results in an additional $47 million per year of guaranteed profit for FPL.[101] The only consumer protection this guideline provides is to limit how much in guaranteed profits FPL can earn in a given year, consumers` bear all project risks and all market risks.

Q. DESCRIBE FPL'S SECOND PROPOSED GUIDELINE "CUSTOMER SAVINGS".

A. FPL's second guideline limits project prudence challenges on future investments to whether a project showed net present value savings "… relying solely on information … available to FPL at the time the transaction was entered, including the use of an independent third party reserve engineering report and FPL's standard fuel price forecasting methodology."[102] Based on this guideline, so long as FPL files testimony consistent with the approaches and general findings in this case, so long as there is just one dollar of consumer net present value savings (no matter

[99] Direct Testimony S. Forrest Exhibit-SF-9.
[100] $2 billion times equity return of (59.6% * 10.5%)
[101] [$750] million times equity return of (59.6% * 10.5%)
[102] Direct Testimony S. Forrest Exhibit-SF-9.

when such savings occur in the project) the Commission must find the investment prudent.

There is no balancing of the equities in these gas reserve investment proposals. FPL's no risk investments can produce hundreds of millions of dollars of added shareholder profits, but so long as FPL projects that consumers receive a single dollar of projected net present value savings the project would be deemed prudent and pass the guideline test. Such an approach or guideline is not fair, or equitable, or a consumer protection.

Q. DESCRIBE GUIDELINE IV "CHARACTERISTICS OF GAS RESERVES".

A. This guideline addresses projects where there are opportunities for oil and natural gas liquids ("NGL's") extraction. FPL proposes to sell off at market NGL's and oil produced and credit project revenue requirements with these revenues. The economic value of these NGL's and oil products will be taken into consideration when evaluating the economic viability of the project. Under this guideline customers must take on the additional risk that oil markets and NGL markets perform as projected by FPL. While FPL again has no risk in the added oil and NGL market and FPL will be guaranteed cost recovery and profit, a project's net present value savings may come down to future market performance of oil or NGL's. This Guideline adds more, not less, risk to customers by expanding the risk free

investments FPL may make. This again is not a consumer protection. It actually adds risks to consumers.

Q. PLEASE SUMMARIZE YOUR TESTIMONY ON FPL'S PROPOSED GUIDELINES.

A. If the Commission declines to accept FPL's proposal then the Guideline issue is moot. With respect to FPL's proposed Guidelines, as I discuss above they essentially add more risk to consumers and guarantee profit opportunities to FPL. The Guideline proposals are one-sided, favoring FPL at every opportunity with no real equity for customers. FPL can only promise not guarantee savings based on projections that may or may not materialize. However, approval of FPL's Guidelines would assure full cost recovery and locked-in shareholder profits.

Q. DO YOU BELIEVE GUIDELINES ARE NECESSARY?

A. No, I do not. To the contrary, the Commission has stated that proposals to pass capital investments through the fuel clause must be brought on a case-by-case basis.[103] If the Commission were to decide to accept the Woodford Project, I recommend that all future gas reserve opportunities be addressed on a case-by-case basis.

FPL claims Guidelines are necessary because counterparties in the gas reserve market are unwilling to wait for standard regulatory approvals to

[103] Docket No. 100404-EI, Order No. PSC-11-0080-PAA-EI, at 7-8 (January 2011).

execute an agreement. FPL further claims counterparties are looking for definitive start dates to begin or continue drilling "… and cannot wait more than a month or two as market prices fluctuate."[104] This Commission should take caution from FPL's claim. If gas reserve market participants must act within a month or two month window **as market prices fluctuate,** why would this Commission or any regulator consider the Woodford Project or any future gas reserve investment where the economic viability rests primarily on a 50-year forecast of market prices, and more than a two-month delay may change the economics of the deal?

For all the above reasons, I recommend rejection of FPL's proposed Guidelines.

IX: CONCLUSIONS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING FPL'S REQUESTED APPLICATION FOR COST RECOVERY OF THE WOODFORD PROJECT GAS RESERVES OWNERSHIP PROPOSAL.

A. I recommend that the Commission deny FPL's requested Woodford Project proposal for the reasons outlined below.

1. FPL's proposed gas exploration, drilling, production joint ventures are not regulated utility services. Rather, they constitute

[104] FPL Petition at 24, paragraph 53.

an effort to participate in an unregulated, nonutility industry that is characterized by a high degree of competition and the risks that accompany that competition. The Commission has no oversight authority to regulate the currently proposed Woodford Project gas exploration venture in Oklahoma or the potential numerous future unknown ventures subject to the FPL proposed Guidelines. The FPL Woodford Project proposal is merely a corporate diversification proposal in which all the risks of entering a competitive business are transferred to FPL's customers and FPL's shareholders are guaranteed rewards with no risk.

2. The FPL Woodford Project joint venture proposal does not satisfy the basic criteria established in past Commission fuel clause decisions and precedents that govern the limited circumstances in which a utility may flow base rate costs and capital investment through the Fuel Clause.

3. The assumptions and projections underlying FPL's prediction of net benefits to customers are unreasonable and/or unrealistic. When risks are identified and accounted for, it is clear that imposing those risks on customers for the purpose of assuring FPL's profitable venture into the unregulated gas exploration business would be grossly inequitable to customers.

4. FPL's proposed guidelines for future ventures are designed to provide profits, not protect customers. They are not consistent with sound ratemaking or Commission precedent.

5. If the Commission were to grant FPL's Petition, the Commission would be guaranteeing FPL's shareholders risk-free profits on the Woodford Project for the next 50 years, as well as risk free profits on other gas exploration, drilling, and possibly including fracking projects under FPL's proposed guidelines. At the same time, as a result of such a decision FPL's customers would be required to become involuntary investors in risky gas exploration, drilling, and fracking projects.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

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Prior to beginning his own consulting practice Diversified Utility Consultants, Inc., in 1986 where he practiced as a firm principal through December 31, 2005, Mr. Lawton had been in the utility consulting business with a national engineering and consulting firm. In addition, Mr. Lawton has been employed as a senior analyst and statistical analyst with the Department of Public Service in Minnesota. Prior to Mr. Lawton's involvement in utility regulation and consulting he taught economics, econometrics, statistics and computer science at Doane College.

Mr. Lawton has conducted numerous financial and cost of capital studies on electric, gas and telephone utilities for various interveners before local, state and federal regulatory bodies. In addition, Mr. Lawton has provided studies, analyses, and expert testimony on statistics, econometrics, accounting, forecasting, and cost of service issues. Other projects in which Mr. Lawton has been involved include rate design and analyses, prudence analyses, fuel cost reviews and regulatory policy issues for electric, gas and telephone utilities. Mr. Lawton has developed software systems, databases and management systems for cost of service analyses.

In addition, Mr. Lawton has developed and reviewed numerous forecasts of energy and demand used for utility generation expansion studies as well as municipal financing. Mr. Lawton has represented numerous municipalities as a negotiator in utility related matters. Such negotiations ranges from the settlement of electric rate cases to the negotiation of provisions in purchase power contracts.

A list of cases in which Mr. Lawton has provided testimony is attached.

UTILITY RATE PROCEEDINGS IN WHICH TESTIMONY HAS BEEN PRESENTED BY DANIEL J. LAWTON

JURISDICTION/COMPANY	DOCKET NO.	TESTIMONY TOPIC
ALASKA REGULATORY COMMISSION		
Beluga Pipe Line Company	P-04-81	Cost of Capital
Municipal Light & Power	U-13-184	Cost of Capital
PUBLIC UTILITIES COMMISSION OF CALIFORNIA		
Southern California Edison	12-0415	Cost of Capital
San Diego Gas and Electric	12-0416	Cost of Capital
Southern California Gas	12-0417	Cost of Capital
Pacific Gas and Electric	12-0418	Cost of Capital
GEORGIA PUBLIC SERVICE COMMISSION		
Georgia Power Co.	25060-U	Cost of Capital
FEDERAL ENERGY REGULATORY COMMISSION		
Alabama Power Company	ER83-369-000	Cost of Capital
Arizona Public Service Company	ER84-450-000	Cost of Capital
Florida Power & Light	EL83-24-000	Cost Allocation, Rate Design
Florida Power & Light	ER84-379-000	Cost of Capital, Rate Design, Cost of Service
Southern California Edison	ER82-427-000	Forecasting

LOUISIANA PUBLIC SERVICE COMMISSION		
Louisiana Power & Light	U-15684	Cost of Capital, Depreciation
Louisiana Power & Light	U-16518	Interim Rate Relief
Louisiana Power & Light	U-16945	Nuclear Prudence, Cost of Service

MARYLAND PUBLIC SERVICE COMMISSION		
Baltimore Gas and Electric Company	9173	Financial
Baltimore Gas and Electric Company	9326	Financial

MINNESOTA PUBLIC UTILITIES COMMISSION		
Continental Telephone	P407/GR-81-700	Cost of Capital
Interstate Power Co.	E001/GR-81-345	Financial
Montana Dakota Utilities	G009/GR-81-448	Financial, Cost of Capital
New ULM Telephone Company	P419/GR81767	Financial
Norman County Telephone	P420/GR-81-230	Rate Design, Cost of Capital
Northern States Power	G002/GR80556	Statistical Forecasting, Cost of Capital
Northwestern Bell	P421/GR80911	Rate Design, Forecasting

MISSUORI PUBLIC SERVICE COMMISSION		
Missouri Gas Energy	GR-2009-0355	Financial
Ameren UE	ER-2010-0036	Financial

FLORIDA PUBLIC SERVICE COMMISSION		
Progress Energy	070052-EI	Cost Recovery
Florida Power and Light	080677-EI	Financial
Florida Power and Light	090130-EI	Depreciation
Progress Energy	090079-EI	Depreciation
Florida Power and Light	120015-EI	Financial Metrics

NORTH CAROLINA UTILITIES COMMISSION		
North Carolina Natural Gas	G-21, Sub 235	Forecasting, Cost of Capital, Cost of Service

OKLAHOMA PUBLIC SERVICE COMMISSION		
Arkansas Oklahoma Gas Corporation	200300088	Cost of Capital
Public Service Company of Oklahoma	200600285	Cost of Capital
Public Service Company of Oklahoma	200800144	Cost of Capital
Public Service Company of Oklahoma	201200054	Financial and Earnings Related

PUBLIC SERVICE COMMISSION OF INDIANA		
Kokomo Gas & Fuel Company	38096	Cost of Capital

PUBLIC UTILITY COMMISSION OF NEVADA		
Nevada Bell	99-9017	Cost of Capital
Nevada Power Company	99-4005	Cost of Capital
Sierra Pacific Power Company	99-4002	Cost of Capital
Nevada Power Company	08-12002	Cost of Capital
Southwest Gas Corporation	09-04003	Cost of Capital
Sierra Pacific Power Company	10-06001 & 10-06002	Cost of Capital & Financial
Nevada Power Co. and Sierra Pacific Power Co.	11-06006 11-06007 11-06008	Cost of Capital
Southwest Gas Corp.	12-04005	Cost of Capital
Sierra Power Company	13-06002 13-06003 13-06003	Cost of Capital
NV Energy & MidAmerican Energy Holdings Co.	13-07021	Merger and Public Interest Financial
Nevada Power Company	14-05004	Cost of Capital

PUBLIC SERVICE COMMISSION OF UTAH		
PacifiCorp	04-035-42	Cost of Capital
Rocky Mountain Power	08-035-38	Cost of Capital
Rocky Mountain Power	09-035-23	Cost of Capital
Rocky Mountain Power	10-035-124	Cost of Capital
Rocky Mountain Power	11-035-200	Cost of Capital

Questar Gas Company	13-057-05	Cost of Capital
Rocky Mountain Power	13-035-184	Cost of Capital

SOUTH CAROLINA PUBLIC SERVICE COMMISSION		
Piedmont Municipal Power	82-352-E	Forecasting

PUBLIC UTILITY COMMISSION OF TEXAS		
Central Power & Light Company	6375	Cost of Capital, Financial Integrity
Central Power & Light Company	9561	Cost of Capital, Revenue Requirements
Central Power & Light Company	7560	Deferred Accounting
Central Power & Light Company	8646	Rate Design, Excess Capacity
Central Power & Light Company	12820	STP Adj. Cost of Capital, Post Test-year adjustments, Rate Case Expenses
Central Power & Light Company	14965	Salary & Wage Exp., Self-Ins. Reserve, Plant Held for Future use, Post Test Year Adjustments, Demand Side Management, Rate Case Exp.
Central Power & Light Company	21528	Securitization of Regulatory Assets
El Paso Electric Company	9945	Cost of Capital, Revenue Requirements, Decommissioning Funding
El Paso Electric Company	12700	Cost of Capital, Rate Moderation Plan, CWIP, Rate Case Expenses
Entergy Gulf States Incorporated	16705	Cost of Service, Rate Base, Revenues, Cost of Capital, Quality of Service
Entergy Gulf States Incorporated	21111	Cost Allocation
Entergy Gulf States Incorporated	21984	Unbundling
Entergy Gulf States Incorporated	22344	Capital Structure

Entergy Gulf States Incorporated	22356	Unbundling
Entergy Gulf States Incorporated	24336	Price to Beat
Gulf States Utilities Company	5560	Cost of Service
Gulf States Utilities Company	6525	Cost of Capital, Financial Integrity
Gulf States Utilities Company	6755/7195	Cost of Service, Cost of Capital, Excess Capacity
Gulf States Utilities Company	8702	Deferred Accounting, Cost of Capital, Cost of Service
Gulf States Utilities Company	10894	Affiliate Transaction
Gulf States Utilities Company	11793	Section 63, Affiliate Transaction
Gulf States Utilities Company	12852	Deferred acctng., self-Ins. reserve, contra AFUDC adj., River Bend Plant specifically assignable to Louisiana, River Bend Decomm., Cost of Capital, Financial Integrity, Cost of Service, Rate Case Expenses
GTE Southwest, Inc.	15332	Rate Case Expenses
Houston Lighting & Power	6765	Forecasting
Houston Lighting & Power	18465	Stranded costs
Lower Colorado River Authority	8400	Debt Service Coverage, Rate Design
Southwestern Electric Power Company	5301	Cost of Service
Southwestern Electric Power Company	4628	Rate Design, Financial Forecasting
Southwestern Electric Power Company	24449	Price to Beat Fuel Factor
Southwestern Bell Telephone Company	8585	Yellow Pages
Southwestern Bell Telephone Company	18509	Rate Group Re-Classification
Southwestern Public Service Company	13456	Interruptible Rates

Southwestern Public Service Company	11520	Cost of Capital
Southwestern Public Service Company	14174	Fuel Reconciliation
Southwestern Public Service Company	14499	TUCO Acquisition
Southwestern Public Service Company	19512	Fuel Reconciliation
Texas-New Mexico Power Company	9491	Cost of Capital, Revenue Requirements, Prudence
Texas-New Mexico Power Company	10200	Prudence
Texas-New Mexico Power Company	17751	Rate Case Expenses
Texas-New Mexico Power Company	21112	Acquisition risks/merger benefits
Texas Utilities Electric Company	9300	Cost of Service, Cost of Capital
Texas Utilities Electric Company	11735	Revenue Requirements
TXU Electric Company	21527	Securitization of Regulatory Assets
West Texas Utilities Company	7510	Cost of Capital, Cost of Service
West Texas Utilities Company	13369	Rate Design

RAILROAD COMMISSION OF TEXAS		
Energas Company	5793	Cost of Capital
Energas Company	8205	Cost of Capital
Energas Company	9002-9135	Cost of Capital, Revenues, Allocation
Lone Star Gas Company	8664	Rate Design, Cost of Capital, Accumulated Depr. & DFIT, Rate Case Exp.
Lone Star Gas Company-Transmission	8935	Implementation of Billing Cycle Adjustment
Southern Union Gas Company	6968	Rate Relief

Southern Union Gas Company	8878	Test Year Revenues, Joint and Common Costs
Texas Gas Service Company	9465	Cost of Capital, Cost of Service, Allocation
TXU Lone Star Pipeline	8976	Cost of Capital, Capital Structure
TXU-Gas Distribution	9145-9151	Cost of Capital, Transport Fee, Cost Allocation, Adjustment Clause
TXU-Gas Distribution	9400	Cost of Service, Allocation, Rate Base, Cost of Capital, Rate Design
Westar Transmission Company	4892/5168	Cost of Capital, Cost of Service
Westar Transmission Company	5787	Cost of Capital, Revenue Requirement
Atmos	10000	Cost of Capital

TEXAS WATER COMMISSION		
Southern Utilities Company	7371-R	Cost of Capital, Cost of Service

SCOTSBLUFF, NEBRASKA CITY COUNCIL		
K. N. Energy, Inc.		Cost of Capital

HOUSTON CITY COUNCIL		
Houston Lighting & Power Company		Forecasting

PUBLIC UTILITY REGULATION BOARD OF EL PASO, TEXAS		
Southern Union Gas Company		Cost of Capital

DISTRICT COURT CAMERON COUNTY, TEXAS		

City of San Benito, et. al. vs. PGE Gas Transmission et. al.	96-12-7404	Fairness Hearing

DISTRICT COURT HARRIS COUNTY, TEXAS		
City of Wharton, et al vs. Houston Lighting & Power	96-016613	Franchise fees

DISTRICT COURT TRAVIS COUNTY, TEXAS		
City of Round Rock, et al vs. Railroad Commission of Texas et al	GV 304,700	Mandamus

SOUTH DAYTONA, FLORIDA		
City of South Daytona v. Florida Power and Light	2008-30441-CICI	Stranded Costs

Redacted, Public Version

Results of FPL's Economic Evaluation With Low Forecast Price Assumption

Period	A Year	B Annual Production (Bcf)	C Operating Expenses ($MM)	D Depreciation ($MM)	E Return Rate[2] ($MM)	F=C+D+E Revenue Requirement ($MM)	G=F/B Effective Cost ($/MMBtu)	H FPL Market Price Forecast ($/MMBtu)	I=Bx(H-G) Undiscounted Customer Savings ($MM)	J FPL Discount Factor	K=IxJ Discounted Customer Savings ($MM)	L Cumulative Customer Savings ($MM)
1	2015	15.6	[redacted]	[redacted]	[redacted]	[redacted]	$3.48	$3.14	-$5.4	0.9302	-$5.0	-$5.0
2	2016	16.8					$3.56	$3.35	-$3.5	0.8849	-$3.0	-$8.0
3	2017	11.3					$4.00	$3.67	-$3.7	0.8043	-$2.9	-$11.0
4	2018	8.7					$4.40	$4.40	$0.0	0.7480	$0.0	-$10.4
5	2019	7.1					$4.98	$4.80	-$2.8	0.6866	-$1.8	-$12.2
6	2020	6.1					$4.79	$4.71	-$0.4	0.6468	-$0.3	-$12.5
7	2021	5.3					$4.94	$4.79	-$0.8	0.6015	-$0.5	-$13.0
8	2022	4.7					$5.08	$4.95	-$0.6	0.5594	-$0.3	-$13.3
9	2023	4.3					$5.21	$5.18	-$0.1	0.5202	-$0.1	-$13.4
10	2024	3.9					$5.34	$5.50	$0.6	0.4837	$0.3	-$13.1
11	2025	3.8					$5.24	$5.73	$1.8	0.4496	$0.8	-$12.3
12	2026	3.9					$5.32	$5.87	$2.1	0.4183	$0.9	-$11.4
13	2027	3.1					$5.39	$6.20	$2.5	0.3890	$1.0	-$10.4
14	2028	2.9					$5.46	$6.51	$3.1	0.3617	$1.1	-$9.3
15	2029	2.8					$5.52	$6.75	$3.4	0.3364	$1.1	-$8.1
16	2030	2.6					$5.58	$6.91	$3.4	0.3128	$1.1	-$7.1
17	2031	2.4					$5.65	$7.17	$3.7	0.2910	$1.1	-$6.0
18	2032	2.3					$5.71	$7.45	$4.0	0.2705	$1.1	-$4.9
19	2033	2.2					$5.80	$7.73	$4.2	0.2516	$1.0	-$3.9
20	2034	2.0					$5.88	$8.03	$4.3	0.2340	$1.0	-$2.9
21	2035	1.9					$5.97	$8.33	$4.6	0.2176	$1.0	-$1.9
22	2036	1.8					$8.05	$8.86	$4.7	0.2023	$0.9	-$0.9
	2037-65	23.1					$7.66	$13.43	$128.0	0.0875	$11.2	$10.3
	Totals[1]	137.8	$323.2	$190.8	$195.5	$709.4			$154.0		$10.3	

Notes:
(1) Totals are for 2015-2065, an assumed 50 year project life. Totals may not add due to rounding.
(2) Return rate includes return on the assets and return of financing costs.
(3) Based on discount rate of 7.5%, which reflects FPL's weighted average cost of capital

Florida Power & Light Company
Docket No. 140001-EI
OPC's 5th Request for PODs
Attachment 1 / Request No. 34
Entire workbook CONFIDENTIAL in its entirety
Bates Nos. FCR-14-03400 through FCR-14-040

Docket No. 140001-EI
Market Price Sensitivity
Exhibit___Schedule (DTL-2)
Page 1 of 1

Redacted, Public Version

Docket No. 140001-EI
Results, FPL's High Output/Reduced Market Price Case
Exhibit ___ Schedule (DJL-3)
Page 1 of 1

Results of FPL's Economic Evaluation With High Production Low Forecast Assumption

	A	B	C	D	E	F=C+D+E	G=F/B	H	I=B x (H-G)	J	K=I x J	L
Period	Year	Annual Production (Bcf)	Operating Expenses ($MM)	Depreciation ($MM)	Return Rate[2] ($MM)	Revenue Requirement ($MM)	Effective Cost ($/MMBtu)	FPL Market Price Forecast ($/MMBtu)	Undiscounted Customer Savings ($MM)	FPL Discount Factor	Discounted Customer Savings ($MM)	Cumulative Customer Savings ($MM)
1	2015	17.2	[redacted]	[redacted]	[redacted]	[redacted]	$3.26	$3.14	-$2.1	0.9302	-$1.9	-$1.9
2	2016	18.5					$3.33	$3.35	$0.5	0.8649	$0.4	-$1.5
3	2017	12.4					$3.74	$3.67	-$0.8	0.8043	-$0.7	-$2.2
4	2018	9.5					$4.12	$4.48	$3.5	0.7480	$2.6	$0.4
5	2019	7.8					$4.57	$4.50	-$0.6	0.6956	-$0.4	$0.0
6	2020	6.7					$4.48	$4.71	$1.7	0.6468	$1.1	$1.1
7	2021	5.8					$4.80	$4.79	$1.1	0.6015	$0.7	$1.8
8	2022	5.2					$4.72	$4.95	$1.2	0.5594	$0.7	$2.4
9	2023	4.7					$4.84	$5.18	$1.6	0.5202	$0.8	$3.3
10	2024	4.3					$4.98	$5.50	$2.3	0.4837	$1.1	$4.4
11	2025	4.0					$4.94	$5.73	$3.1	0.4499	$1.4	$5.8
12	2026	3.7					$5.02	$5.97	$3.5	0.4183	$1.5	$7.3
13	2027	3.4					$5.09	$6.20	$3.6	0.3890	$1.5	$8.7
14	2028	3.2					$5.16	$6.51	$4.4	0.3617	$1.6	$10.3
15	2029	3.0					$5.23	$6.75	$4.6	0.3364	$1.6	$11.9
16	2030	2.8					$5.28	$6.91	$4.6	0.3129	$1.4	$13.3
17	2031	2.7					$5.35	$7.17	$4.9	0.2910	$1.4	$14.7
18	2032	2.5					$5.42	$7.45	$5.1	0.2705	$1.4	$16.1
19	2033	2.4					$5.51	$7.73	$5.3	0.2518	$1.3	$17.4
20	2034	2.2					$5.59	$8.03	$5.4	0.2340	$1.3	$18.7
21	2035	2.1					$5.68	$8.33	$5.5	0.2176	$1.2	$19.9
22	2036	2.0					$5.77	$8.65	$5.7	0.2023	$1.2	$21.1
	2037-65	25.4					$7.66	$13.43	$148.8	0.0386	$13.0	$34.1
	Totals[1]	161.6	$352.3	$180.8	$198.8	$732.5			$211.1		$34.1	

Notes:
(1) Totals are for 2015-2065, an assumed 50 year project life. Totals may not add due to rounding.
(2) Return rate includes return on the rebate and return of financing costs.
(3) Based on discount rate of 7.5%, which reflects FPL's weighted average cost of capital

Florida Power & Light Company
Docket No. 140001-EI
OPC's 5th Request for PODs
Attachment 1 / Request No. 34

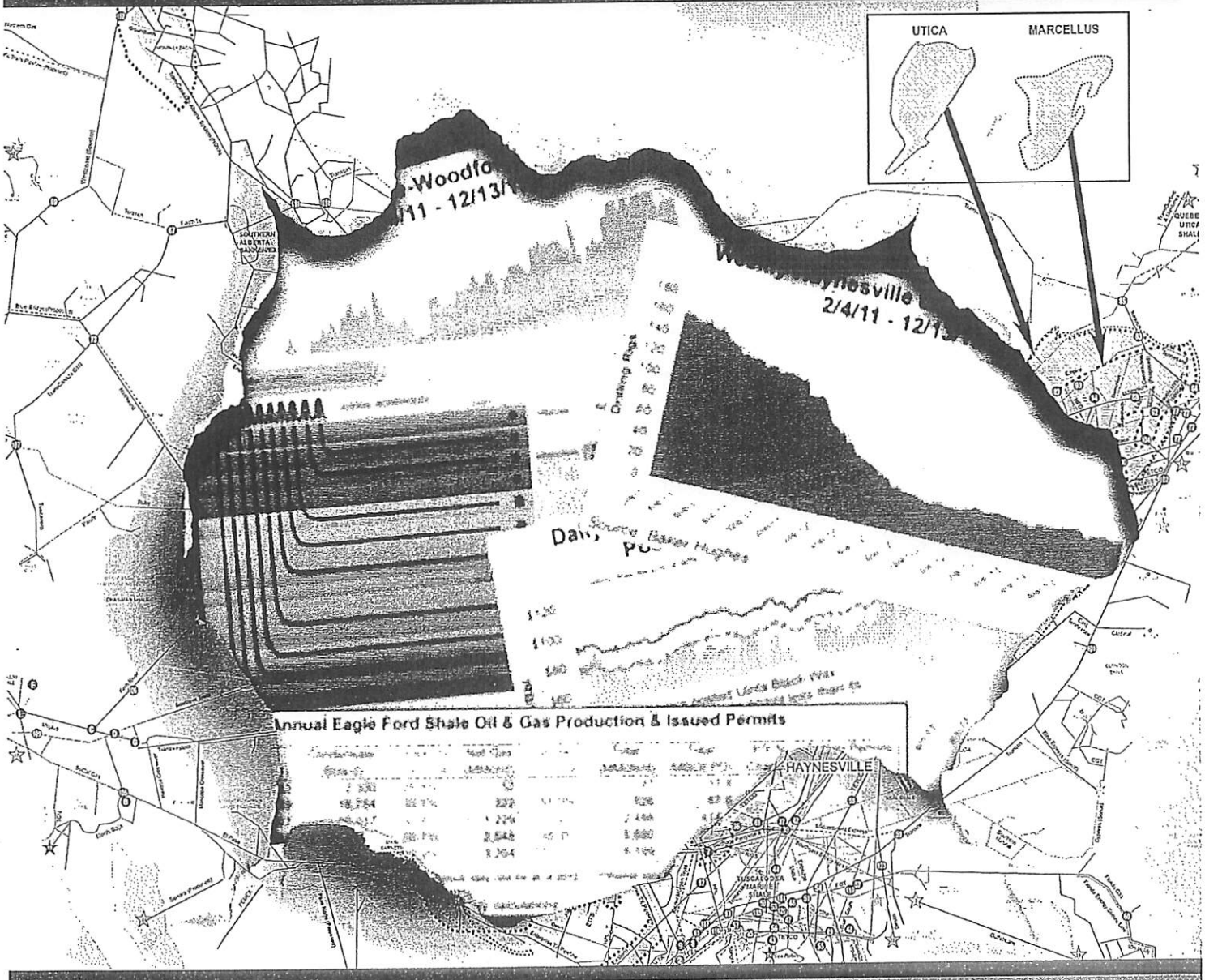
CONFIDENTIAL FPL ANALYSIS OF WOODFORD PROJECT ASSUMING A 3.7% ANNUAL GROWTH IN MARKET PRICES

		FPL BASE ECONOMIC ANALYSIS						ALTERNATIVE MARKET PRICE FORECAST @ 3.7% ANNUALLY		
		A	B	C	D	E	F	G	H	I
								1.037		
LINE NO.	YEAR	ANNUAL PRODUCTION (Bcf)	WOODFORD REVENUE REQUIREMENT ($MM)	WOODFORD UNIT COST ($MMBtu)	FPL MARKET PRICE FORECAST ($MMBtu)	NOMINAL CONSUMER SAVINGS/ (COSTS)	NET PRESENT VALUE SAVINGS/ (COSTS)	ALTERNATIVE MARKET FORECAST AT 3.7% ANNUAL RATE	ALTERNATIVE NOMINAL CONSUMER SAVINGS/ (COSTS)	ALTERNATIVE NET PRESENT VALUE SAVINGS/ (COSTS)
1	2015	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$4.02	$9.41	$7.81
2	2016	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$4.17	$10.17	$8.80
3	2017	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$4.33	$3.90	$3.14
4	2018	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$4.49	$0.87	$0.79
5	2019	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$4.65	-$1.21	-$1.34
6	2020	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$4.83	$0.35	$0.23
7	2021	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$5.00	$0.35	$0.20
8	2022	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$5.19	$0.41	$0.23
9	2023	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$5.38	$0.89	$0.46
10	2024	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$5.58	$0.88	$0.43
11	2025	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$5.79	$1.97	$0.69
12	2026	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$6.00	$2.01	$0.84
13	2027	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$6.22	$2.44	$0.95
14	2028	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$6.45	$2.68	$0.97
15	2029	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$6.69	$3.52	$1.19
16	2030	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$6.94	$3.59	$1.13
17	2031	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$7.20	$3.52	$1.03
18	2032	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$7.46	$4.05	$1.10
19	2033	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$7.74	$4.55	$1.15
20	2034	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$8.03	$4.18	$0.98
21	2035	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$8.32	$4.47	$0.98
22	2036	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$8.63	$4.69	$0.96
23	2037	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$8.95	$4.67	$0.92
24	2038	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$9.28	$4.97	$0.88
25	2039	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$9.62	$4.90	$0.82
26	2040	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$9.98	$4.91	$0.75
27	2041	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$10.35	$4.79	$0.68
28	2042	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$10.73	$4.57	$0.60
29	2043	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$11.13	$5.39	$0.66
30	2044	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$11.54	$5.04	$0.58
31	2045	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$11.97	$4.62	$0.49
32	2046	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$12.41	$4.65	$0.48
33	2047	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$12.87	$4.91	$0.45
34	2048	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$13.35	$4.79	$0.41
35	2049	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$13.84	$4.76	$0.38
36	2050	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$14.35	$4.67	$0.35
37	2051	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$14.88	$4.64	$0.31
38	2052	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$15.43	$4.65	$0.30
39	2053	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$16.01	$4.42	$0.26
40	2054	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$16.60	$4.46	$0.25
41	2055	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$17.21	$4.35	$0.22
42	2056	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$17.85	$4.26	$0.20
43	2057	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$18.51	$4.20	$0.19
44	2058	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$19.19	$4.09	$0.17
45	2059	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$19.90	$3.95	$0.15
46	2060	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$20.64	$3.97	$0.14
47	2061	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$21.40	$3.75	$0.13
48	2062	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$22.20	$3.71	$0.12
49	2063	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$23.02	$3.63	$0.11
50	2064	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	$23.87	$3.54	$0.10
51	TOTAL	[redacted]	[redacted]			[redacted]	[redacted]		$191.43	$43.76

COLUMNS A-F	Florida Power & Light Company Docket No. 140001-EI OPC's 4th Request for PODs Attachment 1 / Request No. 12 Entire workbook CONFIDENTIAL in its entirety FPL-14-00742 through FPL-14-01228.
COLUMN G	GROW FPL 2015 PRICE OF $4.02 AT A 3.7% ANNUAL RATE
COLUMNS H & I	CALCULATED THE SAME AS E & F

NGI'S NORTH AMERICAN SHALE & RESOURCE PLAYS FACTBOOK

RESEARCH • INSIGHT • ANALYSIS • KEY BASIN STATS



NGI Natural Gas Intelligence

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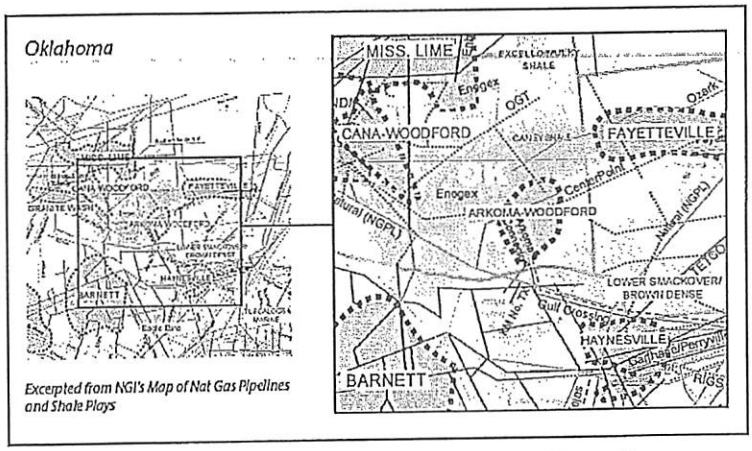
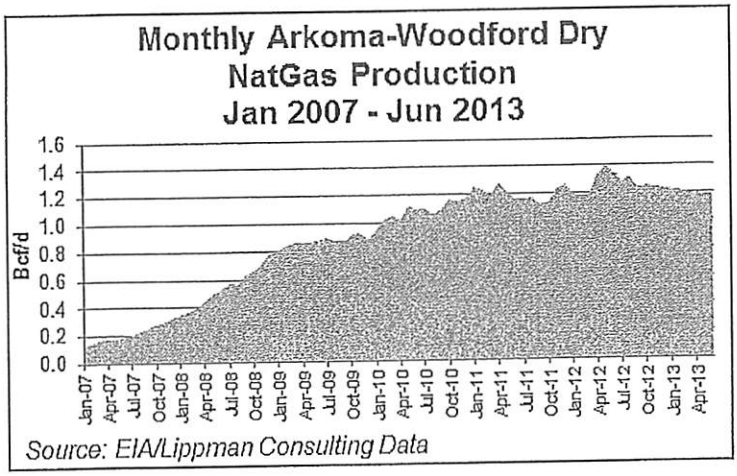
ARKOMA-WOODFORD SHALE

The Arkoma-Woodford may have been one of the first unconventional plays to emerge in the United States, but a "first mover" advantage doesn't always lead to longer-term success. According to the Tulsa Geological Society, the play kicked off with vertical drilling in 2003, and saw its first horizontal well in late 2004. The Arkoma-Woodford is primarily a dry natural gas formation, although as Copano Energy has reported, gas on the western half of the play tends to be somewhat more liquids rich than that on its eastern half. The majority of horizontal drilling in the Arkoma-Woodford has been centered in Atoka, Coal, Hughes, and Pittsburg Counties in Southeastern Oklahoma, with some scattered activity in McIntosh County, OK as well.



Excerpted from NGI's Map of Nat Gas Pipelines and Shale Plays

At one point in 2008, there were more than 50 drilling rigs working the Arkoma-Woodford, but low gas prices, especially relative to crude oil and NGL prices, have all but choked off investment in the region. Most publicly traded companies barely even mention the play in their investor relations presentations anymore, and rig activity in the Arkoma-Woodford has slowed to a near standstill. There were just 5 drilling rigs in the Arkoma-Woodford as of 12/13/13. This lack of drilling has led to a decline in dry gas production in the basin, falling from its peak of 1.4 Bcf/d in May 2012 to 1.2 Bcf/d a year later.



Source: EIA/Lippman Consulting Data

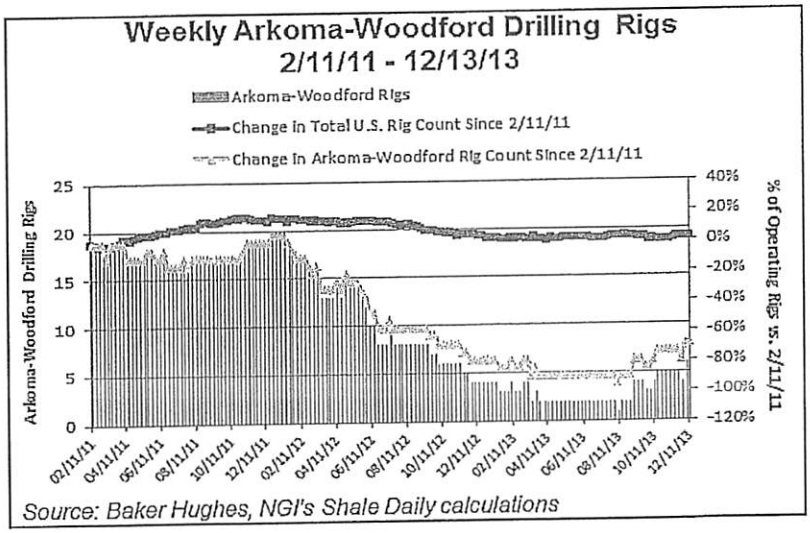
ExxonMobil is the largest acreage holder in the play, followed by Newfield Exploration, BP, Vanguard Natural Resources, PetroQuest, and Devon Energy.

Counties

Oklahoma: Atoka, Coal, Hughes, McIntosh, Pittsburg

NatGas Pipelines

Arkoma Connector, CenterPoint Energy, Enogex, Gulf Crossing, Midcontinent Express, NGPL, OGT, Ozark



Source: Baker Hughes, NGI's Shale Daily calculations

Arkoma-Woodford Shale (continued)

Arkoma-Woodford Shale
Net Acreage Positions
Last Updated 01/14/14

Company	Net Acres
ExxonMobil[1]	385,000
Newfield Exploration	160,000
BP	90,000
Vanguard Natural Resources	66,000
PetroQuest	60,000
Devon Energy	40,000
Cinco Resources	33,000
Continental Resources	26,291
Panhandle Oil & Gas	7,037
Constellation Energy Partners	N/A
Jones Energy	N/A
Pablo Energy II	N/A
Presidium Energy	N/A
Silver Creek Oil & Gas	N/A
Sinclair Oil	N/A
SM Energy	N/A
Southridge Energy	N/A
Unit Corporation	N/A
Ward Petroleum	N/A

[1]May include some Ardmore Basin acreage.

Source: Compiled by NGI's Shale Daily from company reports